MGM INSTITUTE OF HEALTH SCIENCES

(Deemed to be University u/s 3 of UGC Act, 1956)
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COMPETENCY BASED MEDICAL EDUCATION

(CBME)

(with effect from 2019-2020 Batches)

Curriculum for

First M.B.B.S

Human Anatomy

Amended upto AC- 50/2024, Dated 27/11/2024

Amended History

1. Approved as per BOM 57/2019, [Resolution no. 3.1.1.13], Dated 26/04/2019.
2. Amended upto BOM 62/2020, [Resolution No 3.2.1.3.i], Dated 16/09/2020.
3. Amended upto BOM 63/2021, [Resolution No. 4.4.1.6], Dated 17/02/2021.
4. Amended upto AC-41/2021, [Resolution No. 4.1], [Resolution No. 4.3], [Resolution No. 4.4], [Resolution No. 4.8], [Resolution No. 4.9], [Resolution No. 4.10]; Dated 27/08/2021
5. Amended upto AC-42/2022, [Resolution No. 3.4], [Resolution No. 3.6], [Resolution No. 3. 19]; dated 26/04/2022 (Incorporated at the end of syllabus).
6. Amended upto AC-46/2023, [Resolution No. 5.2], Dated 28/04/203.
7. Amended upto AC-48/2023, [Resolution No. 5.4], [Resolution No. 5.6], [Resolution No. 5.8], [Resolution No. 5.10],[Resolution No. 5.11], Dated 12/12/2023.
8. Amended upto AC-50/2024, [Resolution No. 4.1], [Resolution No. 4.2], [Resolution No. 4.3], [Resolution No. 4.4],[Resolution No. 4.5], [Resolution No. 4.6], [Resolution No. 4.7], [Resolution No. 4.8], [Resolution No. 4.9], [Resolution No. 4.10], [Resolution No. 4.15], [Resolution No. 4.16] Dated 27/11/2024.

Resolution No. 4.4 of AC-41/2021: Resolved to include "MGMIHS Graduate Attributes" in 1st MBBS Anatomy Physiology and Biochemistry syllabi and cover them in the foundation course, Journals & logbooks, with effect from the batch admitted in 2021-22 onwards

Annexure-23 of AC-41-2021

MGM INSTITUTE OF HEALTH SCIENCES, NAVI MUMBAI

GRADUATE ATTRIBUTES

A student graduating from MGM Institute of Health Sciences, Navi Mumbai, should attain the following attributes:

1. Dynamic professionalism
2. Exemplary leadership
3. Effective communication skills
4. Scholarly attitude
5. Element of critical thinking
6. Enthusiasm for research
7. Social commitment
8. Global competencies

Dynamic professionalism:

Abide by professional codes of conduct, demonstrate high personal standards of behaviour, be considerate, trustworthy and honest, act with integrity. Apply effective strategies to maintain their own physical, psychological, social and spiritual well-being. Should be able to apply profession-specific knowledge, clinical skills and professional attitudes in implementation of evidence-based protocols for optimal outcome.

Exemplary leadership:

Focuses on the qualities required to effectively manage a career, as a practitioner or academician , work effectively within a system aiming at quality improvement ,fostering a spirit of team-building.

Effective communication skills:

Communicates effectively and humanely with all stakeholders, their families, colleagues, through a variety of means , gathers and conveys information respectfully , in a culturally acceptable and dignified manner.

Scholarly attitude:

Demonstrates a lifelong commitment to reflective learning, strives to maintain professional competence. Committed to learn, disseminate, apply and translate knowledge

Element of critical thinking:

Will develop a habit of inquiry, use the knowledge gained for dealing with complex situations foster an ambience conducive for effective learning with constructive criticism, exercise critical judgement in evaluating sources of information.

Enthusiasm for research:

Develop intellectual curiosity and embark upon opportunities to develop research capabilities. Imbibe the basic principles of research methodology and engage in ethical research.

Social commitment:

Inculcate values of self-awareness, empathy, mutual respect. Understand our obligation to society and foster an ability to work in a diverse cultural setting. Understand how one's actions can enhance the well-being of others.

Global competencies:

Team- building, communication, self-management, collaborative working, openness and respect for a range of perspectives.

Annexure – C – I

MGM Institute of Health Sciences, Navi Mumbai

MGM Medical College

1st year MBBS. CBME

Human Anatomy Syllabus

(As per MCI CBME Curriculum)

Subject – **Human Anatomy**

Total Subject hours – 675 + **30 hours** of **Early Clinical Exposure + 12 hours of AETCOM**

1. **Lectures** – 220 hours
2. **SGT / Tutorial / Practical (Dissection, Demonstration, Histology, Embryology -** 415 hours
3. **SDL** – 40 hours

Sr. No.	Topic	Hours	
1	Theory		220
2	Practical		415
	• Dissection	245	
	• Demonstration	70	
	• Histology	62	
	• Embryology	23	
	• Radiology + Surface & living anatomy	15	
3	SDL		40
4	ECE		30
5	AETCOM		12
Total			717 (675+30+12)

Resolution No. 4.4 of Academic Council (AC-50/2024): Resolved to approve and adopt the distribution of hours of foundation course of **First MBBS from 2024-25 batch onwards. [ANNEXURE-24]**

Foundation Course

Foundation Course- 2 weeks at start of the course

Subject/ contents	Teaching Hours
Orientation Module including History of Indian Medicine	15
Skills Module	15
Community orientation module	5
Professional Development and Ethics Module (P&E) including Mental health	20
Enhancement of Language and Computer Skills Module including Clinico -laboratory communication	10
Sports and Extracurricular Activities	15
Total	80

Resolution No. 4.6 of Academic Council (AC-50/2024): Resolved to approve & adopt the distribution of subject wise teaching hours for first professional MBBS from 2024-25 batch onwards as per new CBME guidelines published on 12/09/2024. **[ANNEXURE-26]**

Distribution of Subject Wise Teaching Hours for 1 st MBBS

(With effect from batch 2024-2025)

Subject	Lecture (Hrs)	SGL (Hrs)	SDL (Hrs)	Total (Hrs)
Foundation Course (FC) will be conducted at the beginning of 1st MBBS for 01 week				**80**
Anatomy	180	430	**10**	**620**
Physiology	130	305	**10**	**445**
Biochemistry *	82	157	**10**	**249**
ECE**	27	-	**0**	**27**
Community Medicine	20	20	**-**	**40**
FAP			**27**	**27**
AETCOM ***		26		**26**
Sports + Extra –curricular activities				**10**
Total				**1521#**

As per NMC "Guidelines for Competency Based Medical Education (CBME) Curriculum 2024" on 12/09/2024, page No- 53

***Including molecular biology**

****Early Clinical exposure hours to be divided equally in all three subjects.**

***** AETCOM module shall be a longitudinal programme.**

 # includes hours for Foundation course also.

SR. NO.	TOPIC		COMPETENCY NUMBER
	NAME	DESCRIPTION	
	I - GENERAL ANATOMY		**AN1- AN7**
	CORE/ Y		
1	**Introduction**	Introduction to Anatomy & Terminology	AN1.1,2
2	**Bone & Cartilage**	Definition, Parts of a long bone, blood supply of long bone, various Classifications , types - structure, subtypes and examples,	AN2.1,4
		Epiphysis and its types,	
		Cartilage - definition, types, examples	
3	**Joints**	Classification, Fibrous joints, cartilaginous joints, Synovial joints – definition, Classification, stucture and examples, applied anatomy	AN2.5,6
		Synovial joints - nerve supply, Hilton's law,	
		Close packed and loose packed joints, range of movements,	
4	**Muscle**	Definition, Classification – functional and morphological, Origin, Insertion, Tendon, ligaments, Bursae.	AN3.1,2
5	**Skin & fascia**	Structure and Functions of Skin, Superficial fascia, deep fascia, modifications of deep fascia	AN4.2,3,4
6	**Circulatory System**	Types of circulation and its importance, classification of vessels (anatomical and physiological),	AN5.1,2,3,4,5,6
		Structure of blood vessels,	
		Factors affecting venous return,	
		anastomosis, end arteries,	
		pulmonary and systemic circulation, define portal circulation with examples	
8	**Nervous System**	Classification – Central Nervous System(CNS), Peripheral nervous system (PNS) and autonomic nervous system (ANS),	AN7.1,2,3,4,6
		PNS – Cranial Nerves, Spinal Nerves, Typical Spinal Nerve, Myelination & Dermatomes, concept of muscle paralysis	
		Classification of neurons, Nerve fibres & Glial cells,	

SR. NO.	TOPIC		COMPETENCY NUMBER
	NAME	**DESCRIPTION**	
	I - GENERAL ANATOMY		**AN1- AN7**
	NON CORE/ N		
1	**Bone**	Enumerate special features of a sesamoid bone, ossification and its classification, Laws of ossification.	AN2.2,3
2	**Muscles**	Spin, swing components of movememts, types of levers, Explain Shunt and spurt muscles, Bursitis Kinesiology, Describe principles of sensory and motor innervation of muscles	AN3.3
3	**Skin & fascia**	Describe different types of skin & dermatomes in body, Langer's lines, Flexure creases, Explain principles of skin incisions, Dermatoglyphics, Skin graft	AN4.1,5
4	**Circulatory System**	Explain function of meta-arterioles, precapillary sphincters, arterio-venous anastomoses, Define atherosclerosis, thrombosis, infarction & aneurysm	AN5.7,8
5	**Lymphatic System**	Lymphatic circulation, circulating lymphocytes, lymphoid tissue, functions, lymphoedema, tumours	AN6.1,2,3
6	**Nervous System**	Describe various type of synapse, Describe differences between sympathetic and spinal ganglia	AN7.5,7,8

SR. NO.	SUBTOPIC		COMPETENCY NUMBER
	NAME	DESCRIPTION	
	II UPPER LIMB		**AN8- AN13**
	CORE/ Y		
1	**Bones**	Clavicle, Scapula, Humerus, Radius, Ulna, Articulated hand, Supracondylar fracture, fracture neck humerus, Colles fracture, peculiarities of clavicle and pisiform	AN8.1,2,3,4,5
2	**Pectoral region,**	Mammary gland - location, extent, deep relations, structure, age changes, blood supply, lymphatic drainage, microanatomy and applied anatomy	AN9.1,2
		Muscle Attachments, Nerve Supply, actions of pectoralis major, minor	
3	**Axilla, Scapular & shoulder region**	axilla - boundaries, contents, applied anatomy	AN10.1,2,3,4,5,8, 9,10,11
		Brachial plexus,	
		Axillary artery, vein & lymph nodes,	
		Muscle Attachments, Nerve Supply, actions of deltoid, serratus anterior, Winging of scapula, Trapezius, lattissimus dorsi, rotator cuff,	
4	**Arm, Cubital fossa**	Muscle Attachments, Nerve Supply, actions of muscles of arm (esp.- biceps, triceps),	AN11.1,2,3,4,5
		Axillary nerve, Musculocutaneous nerve, brachial artery,	
		fascial compartments of upper limb,	
		cubital fossa - boundaries, contents, applied anatomy, Venepuncture of cubital veins	
5	**Forearm, hand**	Muscle Attachments, Nerve Supply, actions of muscles of forearm - flexors & extensors (esp. brachioradialis, pronator teres), intrinsic muscles of palm (groups, esp. lumbricals, interossei),	AN12.1,2,3,4,5,6, 7,8,9,11,12,13,14, 15 AN13.1
		Nerves - , Radial Nerve, Median nerve, Ulnar nerve,	
		Radial and ulnar arteries, superficial and deep palmar arches, Venous and lymphatic drainage of upper limb,	
		retinacula, fibrous flexor sheaths, ulnar bursa, radial bursa and digital synovial sheaths, extensor expansion formation,	
		Applied – , Tennis elbow, Wrist drop, claw hand, Dupuytren's contracture, carpal tunnel syndrome, Anatomical snuff box.	

SR. NO.	SUBTOPIC		COMPETENCY NUMBER
	NAME	DESCRIPTION	
II UPPER LIMB			**AN8- AN13**
	CORE/ Y		
6	**Joints**	shoulder girdle & shoulder joint, elbow joint, wrist joint, Superior and inferior radioulnar joints, 1st carpometacarpal joint. - type, articular surfaces, capsule, synovial membrane, ligaments, relations, movements, muscles involved, blood supply, nerve supply and applied anatomy	AN10.12 AN13.3
	NON CORE/ N		
1	**Bones**	scaphoid fracture	AN8.6
2	**Applied**	anatomical basis of clinical features of Injury to axillary nerve, infection of fascial spaces of palm, enlarged axillary lymph nodes	AN10.7,13, AN12.10
3	**Anastomoses**	Arterial anastomosis around the scapula & elbow joint and mention the boundaries of triangle of auscultation	AN10.9, AN11.6
4	**Dermatomes**	Dermatomes of upper limb	AN13.2
5	**Joints**	Sternoclavicular joint, Acromioclavicular joint, Carpometacarpal joints & Metacarpophalangeal joint	AN13.4

SR. NO.	SUBTOPIC		COMPETENCY NUMBER
	NAME	**DESCRIPTION**	
III LOWER LIMB			**AN14- AN20**
	CORE/ Y		
1	**Bones**	Hip bone, Femur, Tibia, Fibula, Patella, articulated foot, (esp. talus and calcaneum) importance of ossification of lower end of femur & upper end of tibia, blood supply of head of femur	AN14.1,2,3
2	**Front & medial side of thigh**	Muscles – Attachments, nerve supply and actions of muscles of front & medial side of thigh (esp. quadriceps femoris, sartorius, adductor longus, magnus)	AN15.1,2,3,5
		Nerves - Femoral nerve, Obturator nerve, Vessels – Femoral artery	
		Boundaries, contents, applied anatomy of - femoral triangle with femoral sheath & adductor canal	
3	**Gluteal region, back of thigh,**	Muscles – Attachments, nerve supply and actions of muscles of Gluteal region (Glutei), back of thigh with anatomical basis of sciatic nerve injury during gluteal intramuscular injections and Trendelenburg sign	AN16.1,2,3,4,5,6
		Nerves – Sciatic nerve, vessels - cruciate and trochanteric anastomosis, popliteal artery	
		Boundaries, contents, applied anatomy of - popliteal fossa	
4	**Anterolateral compartment of leg & dorsum of foot**	Muscles – Attachments, nerve supply and actions of Anterolateral compartment of leg (esp. tibialis anterior)	AN18.1,2,3
		Nerve - common peroneal nerve with anatomical basis of foot drop, vessels - anterior tibial and dorsalis pedis artery	
5	**Back of Leg & Sole**	Muscles – Attachments, nerve supply and actions of muscles of Back of Leg (esp. triceps surae with concept of Peripheral heart, tibialis posterior) & Sole, layers (names of muscles)	AN19.1,2,3
		Nerve - tibial nerve, vessels - posterior tibial, and medial and lateral plantar nerves and vessels	

SR. NO.	SUBTOPIC		COMPETENCY NUMBER
	NAME	DESCRIPTION	
III LOWER LIMB			**AN14- AN20**
	CORE/ Y		
6	**General Features**	Fascia lata, Retinacula & Dermatomes of lower limb	AN20.3,5
		Venous drainage of lower limb with applied anatomy (esp. anatomical basis of varicose veins and deep vein thrombosis)	
		Lymphatic drainage,	
7	**Joints**	Hip joint, knee joint, tibiofibular, ankle joint - type, articular surfaces, capsule, synovial membrane, ligaments, relations, movements, muscles involved, blood supply, nerve supply and applied anatomy (esp. Trendelenburg sign,)	AN17.1, AN18.4,5, AN19.5, AN 20.1
		arches of foot - formation, functions, maintaining factors and applied anatomy	
	NONCORE/ N		
1	**Bones**	Various bones in the articulated foot with individual muscle attachment	AN14.4
2	**Applied**	Anatomical basis of Psoas abscess & Femoral hernia, complications of fracture neck of femur, dislocation of hip joint and surgical hip replacement, knee joint injuries, Osteoarthritis, rupture of calcaneal tendon, Flat foot & Club foot, Metatarsalgia & Plantar fasciitis, enlarged inguinal lymph nodes	AN15.4, AN17.2,3, AN18.6,7, AN19.4,6,7, AN20.4
3	**Joints**	Subtalar and transverse tarsal joints - type, articular surfaces, ligaments, movements, muscles involved, nerve supply and applied anatomy	AN20.2

SR. NO.	SUBTOPIC		COMPETENCY NUMBER
	NAME	**DESCRIPTION**	
IV THORAX			**AN21- AN24**
	CORE/ Y		
1	**Thoracic cage**	Bones – Ribs, sternum, Thoracic vertebrae	AN21.1,3,4,5,6,8,9
		Joints of Thorax - type, articular surfaces & movements of manubriosternal, costovertebral, costotransverse and xiphisternal joints	
		Thoracic cage – Inlet, cavity, outlet	
		intercostal spaces - types, boundaries, contents with vessels, nerves with its clinical importance,	
		mechanism of respiration - types, movements, muscles, applied anatomy	
2	**Heart & Pericardium**	Pericardium - subdivisions, sinuses, blood supply, nerve supply and applied aspect	AN22.1-7
		heart - features, blood supply, fibrous skeleton, conducting system, applied anatomy	
3	**Mediastinum**	Mediastinum – Divisions, boundaries and contents	AN23.1,2,3,4,5,7
		Oesophagus - features, relations, blood supply, nerve supply,lymphatic drainage and applied anatomy	
		Thoracic duct - extent, relations, tributaries, applied anatomy	
		Superior vena cava, azygos venous system - origin, course, relations, tributaries, termination and applied anatomy	
		Aorta - extent, branches, relations and applied anatomy	
		Thoracic sympathetic chain	
4	**Lungs & Trachea**	Pleura - extent, recesses, blood supply, lymphatic drainage, nerve supply, applied anatomy	AN24.1-5
		Lung - features, relations, Bronchopulmonary segments, blood supply, lymphatic drainage, nerve supply, applied anatomy	
		Phrenic nerve - formation & distribution	

SR. NO.	SUBTOPIC		COMPETENCY NUMBER
	NAME	**DESCRIPTION**	
IV THORAX			**AN21- AN24**
	NON CORE/ N		
1	**Thoracic cage**	Features of 2nd, 11th and 12th ribs, 1st, 11th and 12th thoracic vertebrae	AN21.2
		Origin, course, relations and branches of 1) atypical intercostal nerve 2) superior intercostal artery, subcostal artery	AN21.7
		Costochondral and interchondral joints	AN21.10
2	**Mediastinum**	Splanchnic nerves	AN23.6
3	**Lungs & Trachea**	Extent, length, relations, blood supply, lymphatic drainage and nerve supply of trachea	AN24.6

SR. NO.	SUBTOPIC		COMPETENCY NUMBER
	NAME	**DESCRIPTION**	
V HEAD, FACE, NECK			**AN26- AN43**
	CORE/ Y		
1	**Osteology**	skull – parts, bones, Normas-verticalis, occipitalis, Frontalis, lateralis, basalis, interior of skull, Mandible, Cervical vertebrae, fetal skull	AN26.1-5
2	**Scalp**	layers, blood supply, nerve supply and surgical importance	AN27.1,2
3	**Face & parotid region**	Muscles of facial expression with nerve supply	AN28.1-9
		Facial vessels - course, branches with applied aspect	
		Nerve supply of face - sensory, motor - with course and distribution, applied anatomy of VII nerve	
		lymphatic drainage of HFN - cervical lymph nodes with applied anatomy	
		parotid gland - features, relations, nerve supply, duct and surgical importance	
4	**Neck**	Anterior & posterior triangles of neck – Boundaries, subdivisions, contents, applied aspect, Midline structure of neck,	AN29.1,2 AN32.1,2 AN35.1-7
		Muscle Attachments, Nerve Supply, actions of Sternocleidomastoid, digastric, omohyoid, stylohyoid, mylohyoid	

SR. NO.	SUBTOPIC		COMPETENCY NUMBER
	NAME	**DESCRIPTION**	
V HEAD, FACE, NECK			**AN26- AN43**
	CORE/ Y		
4	**Neck**	deep cervical fascia - parts, extent, attachments, modifications, spaces, applied anatomy	AN29.1,2 AN32.1,2 AN35.1-7
		thyroid gland - location, parts, borders, surfaces, relations, blood supply and applied anatomy	
		Vessels - origin, course, relations, branches/ tributaries and termination of Carotid arteries, subclavian artery, internal, external jugular, brachiocephalic veins	
		Nerves - course and distribution of IX, X, XI & XII nerves, cervical sympathetic chain	
5	**Cranial cavity, Orbit**	dural folds - attachments and contents, dural venous sinuses - classification, location, communications, tributaries and applied of sagittal, cavernous sinuses	AN30.1-4 AN31.1,2,4,5
		Extraocular - Muscles Attachments, Nerve Supply, actions, applied anatomy	
		Vessels - origin, branches/ tributaries and termination of ophthalmic vessels	
		Nerves - course and distribution of III,IV,VI nerves & ciliary ganglion - roots, branches	
5	**Cranial cavity, Orbit**	Pituitary gland - location, parts, relations, blood supply and applied anatomy	AN30.1-4 AN31.1,2,4,5
		Lacrimal apparatus	
6	**Temporal, Infra-temporal & sub-mandibular regions**	Temporal and infratemporal fossae - extent, boundaries and contents	AN33.1-4 AN34.1
		Muscles of mastication - Attachments, Nerve Supply, actions, applied anatomy	
		Temporo-mandibular joint - type, articular surfaces, ligaments, relations, movements, muscles involved, blood supply, nerve supply and applied anatomy	
		Nerves - course and distribution, applied anatomy of V3 nerve with otic, submandibular & Pteriogopalatine ganglia - roots, branches, applied anatomy	

SR. NO.	SUBTOPIC		COMPETENCY NUMBER
	NAME	**DESCRIPTION**	
V HEAD, FACE, NECK			**AN26- AN43**
	CORE/ Y		
6	**Temporal, Infra-temporal & sub-mandibular regions**	Vessels - origin, branches/ tributaries and termination and applied anatomy of maxillary artery, pterygoid venous plexus	AN33.1-4 AN34.1
		morphology, relations, nerve supply & applied anatomy of submandibular salivary gland	
7	**Mouth, Pharynx & Palate**	Parts if any, morphology, relations, blood supply and applied anatomy of - pharynx, palatine tonsil, palate	AN36.1,2 AN39.1
		Tongue - morphology, muscles, nerve & blood supply, lymphatic drainage, applied anatomy	
8	**Nose & Larynx**	nasal septum, lateral wall of nose - features, blood supply, nerve supply and applied anatomy	AN37.1,2 AN38.1
		paranasal sinuses - number, features, relations, blood supply, nerve supply and applied anatomy	
		Larynx - external & internal features, muscles, nerve supply, blood supply, lymphatic drainage, applied anatomy	
9	**Ear & Eye**	External ear - parts, blood supply and nerve supply	AN40.1,2 AN41.1
		Middle ear and auditory tube - boundaries, contents, relations and functional anatomy	
		Parts and layers of eyeball	
10	**Back**	Boundaries and contents of Suboccipital triangle	AN42.2
11	**Joints**	Craniovertebral joints - type, articular surfaces, ligaments, movements, muscles involved and applied anatomy	AN43.1

SR. NO.	SUBTOPIC		COMPETENCY NUMBER
	NAME	DESCRIPTION	
V HEAD, FACE, NECK			AN26- AN43
	NON CORE/ N		
1	**Bones**	concept of membrane bones, 7th cervical vertebra	AN26.6,7
2	**Applied aspects**	Anatomical basis of - Frey's syndrome, wry neck, Horner's syndrome, TMJ dislocation, submandibular stones, cervical rib with compression signs, effect of pituitary tumours on visual pathway, tonsillitis, tonsillectomy, adenoids, peri-tonsillar abscess, significance of Killian's dehiscence, sinusitis & maxillary sinus tumours, laryngitis, recurrent laryngeal nerve injury, hypoglossal nerve palsy, otitis externa and otitis media, myringotomy, cataract, glaucoma & central retinal artery occlusion, Thyroid swellings & their significance,	AN28.10 AN29.3 AN30.5 AN31.3 AN33.5 AN34.2 AN35.8,9 AN36.4,5 AN37.3 AN38.2,3 AN39.2 AN40.4,5 AN41.2
3	**Muscles**	omohyoid, scalenus anterior & medius, levator scapulae, intraocular muscles, semispinalis capitis and splenius capitis - attachments, nerve supply and actions	AN29.4 AN41.3 AN42.3
4	**Spaces**	Fascial spaces of neck, boundaries and clinical significance of pyriform fossa	AN35.10 AN36.3
5	**Ear**	features of internal ear	AN40.3

SR. NO.	SUBTOPIC		COMPETENCY NUMBER
	NAME	DESCRIPTION	
	VI ABDOMEN AND PELVIS		**AN44 - AN53**
	CORE/ Y		
1	**Bones**	lumbar vertebrae, sacrum - features, articulations & attachments	AN53.1,2,3
		Pelvis: Types of pelvis, inlet, cavity, outlet of pelvis and pelvimetry and sex differences	
2	**Anterior & Posterior abdominal wall**	Anterior abdominal wall – planes,quadrants, regions, layers, Muscles, nerve & blood supply, applied aspect	AN44.1-6 AN45.1,2
		Rectus sheath and inguinal canal - site, boundaries, contents, applied aspect	
		Posterior abdominal wall: muscles, fascia, nerves - lumbar plexus	
3	**Male external genitalia**	Testis - coverings, structure, blood & nerve supply, lymphatic drainage & applied anatomy, Epididymis, Spermatic cord, scrotum, Penis - parts, components, blood supply and lymphatic drainage	AN46.1,2,3
4	**Abdominal cavity**	Peritoneum – Greater sac, lesser sac, Epiploic foramen, peritoneal folds, pouches, recesses and applied anatomy	AN47.1,2,5,8,9,10, 11,13
		Viscera - Position, features, relations, blood & nerve supply, lymphatic drainage and applied aspects - Stomach, Duodenum, Small and large intestine, Appendix, Liver, Pancreas, spleen, kidney, suprarenal glands, ureter	
		extrahepatic biliary apparatus - Position, parts, features, relations, blood & nerve supply, lymphatic drainage and applied aspects	
		Vessels - formation, course, relations and Branches/ tributaries and applied aspects of Abdominal aorta, Coeliac trunk, Superior mesenteric, Inferior mesenteric, Common iliac artery & Portal vein, Inferior vena cava & Renal vein,	
		thoracoabdominal diaphragm - attachments, openings, nerve supply, actions and applied anatomy	

SR. NO.	SUBTOPIC		COMPETENCY NUMBER
	NAME	DESCRIPTION	
VI ABDOMEN AND PELVIS			**AN44 - AN53**
	CORE/ Y		
5	**Pelvic wall and viscera**	Pelvic diaphragm - layers, attachments, openings, nerve supply, actions and applied anatomy	AN48.1-4
		Viscera - Position, features, relations, blood & nerve supply, lymphatic drainage and applied aspects - urinary bladder, Rectum and anal canal, vas deference, prostate, urethra, ovary, Uterus, fallopian tubes, vagina	
		Vessels - formation, course, relations and Branches and applied aspects of internal iliac arteries	
		Nerves - Lumbosacral plexus	
6	**Perineum**	Perineal pouches, ischioanal fossa - site, boundaries, contents, applied aspect	AN49.1-4
		Urogenital diaphragm - layers, attachments, openings, actions and applied anatomy with Perineal body	
7	**Vertebral column**	curvatures,Intervertebral joints - type, articular ends, ligaments and movements, applied aspect	AN50.1,2 AN42.1
		Contents of the vertebral canal,	
8	**Sectional Anatomy**	Cross-section at the level of T8, T10 and L1	AN51.1,2
		Midsagittal section of male and female pelvis	

SR. NO.	SUBTOPIC		COMPETENCY NUMBER
	NAME	COMPETENCY NUMBER	
VI ABDOMEN AND PELVIS			**AN44 - AN53**
	NON CORE/ N		
1	**Bones**	anatomical basis of Scoliosis, Lordosis, Prolapsed disc, Spondylolisthesis & Spina bifida	AN50.4 AN53.4
		Clinical importance of sacralization of lumbar vertebra, Lumbarization of 1st sacral vertebra, types of bony pelvis & Coccyx	
2	**Abdominal wall**	Common Abdominal incisions	AN44.7,8 AN47.12
		nerve plexuses of posterior abdominal wall	
3	**Back**	Major subgroups of back muscles, nerve supply and action	
4	**Applied aspects - Abdomen**	Anatomical basis - Psoas abscess, Varicocoele, Phimosis & Circumcision, Ascites & Peritonitis, Subphrenic abscess, Splenic notch, Accessory spleens, Kehr's sign, Different types of vagotomy, Liver biopsy (site of needle puncture), Referred pain in cholecystitis, Obstructive jaundice, Calot's triangle, Referred pain around umbilicus, Radiating pain of kidney to groin & Lymphatic spread in carcinoma stomach,	AN44.9 AN44.10 AN47.3,4,6,7
5	**Applied aspects - Pelvis**	Anatomical basis of - suprapubic cystostomy, Automatic bladder, Urinary obstruction in benign prostatic hypertrophy, benign prostatic hypertrophy & prostatic cancer, Retroverted uterus, Prolapse uterus, Internal and external haemorrhoids, Anal fistula, Vasectomy, Tubal pregnancy & Tubal ligation	AN48.5,6,7
6	**Applied aspects - Perineum**	Anatomical basis of Perineal tear, Episiotomy, Perianal abscess and Anal fissure and structures palpable during vaginal & rectal examination	AN48.8 AN49.5
7	**Diaphragm**	abnormal openings of thoracoabdominal diaphragm and diaphragmatic hernia	AN47.14

SR. NO.	SUBTOPIC		COMPETENCY NUMBER
	NAME	**DESCRIPTION**	
VII NEURO ANATOMY			**AN56 - AN63**
	CORE/ Y		
1	**Meninges & CSF**	Meninges - layers, extent, Spaces, modifications and applied anatomy	AN56.1,2
		CSF - circulation & applied anatomy	
2	**Spinal cord**	Features, Cross section - mid-cervical & mid- thoracic level, tracts, Blood supply & clinical anatomy,	AN57.1-4
3	**Brain stem**	Medulla oblongata, Pons, Midbrain - Features, Blood Supply, cranial nerve nuclei & syndromes	AN58.1-3 AN59.1-3 AN61.1,2 AN62.1
		Sections of Medulla oblongata, Pons, Midbrain - sensory & pyramidal decussation,olivary levels, upper & lower levels of pons, Superior & inferior collicular levels	
		Cranial nerve nuclei with its functional components	
4	**Cerebellum**	Features, Classification, connections - Superior, middle and inferior cerebellar peduncles, deep cerebellar nuclei, , functions, Blood supply and clinical anatomy	AN60.1,2
5	**Cerebrum**	Features, sulci and gyri, functional areas & applied anatomy,	AN62.2-6
		White matter – Classification, & corpus callosum, internal capsule –parts, blood supply & applied anatomy,	
		Blood Supply of Brain, Blood brain barrier, Circle of Willis, applied aspects	
		Diencephalon - Parts, relations, Gross connections, major nuclei - Thalamus, hypothalamus, epi, meta & subthalamus, applied aspects	
		Basal ganglia - parts, connections, applied aspects	
		Limbic system - parts, connections, applied aspects	
6	**Ventricular System**	Overview ventricular system and its communication, CSF circulation,	AN63.1
		Lateral & IIIrd, IVth ventricle - parts, boundaries, features & applied anatomy	
7	**ANS**	Autonomic nervous system - Parts, connections, functions, applied aspect	

SR. NO.	SUBTOPIC		COMPETENCY NUMBER
	NAME	DESCRIPTION	
VII NEURO ANATOMY			**AN56 - AN63**
	NON CORE/ N		
1	**Anatomical aspect**	Anatomical basis of - syringomyelia, Effects of medial & lateral medullary syndrome, cerebellar dysfunction, Effects of Benedikt's and Weber's syndrome, congenital hydrocephalus	AN57.5 AN58.4 AN60.3 AN61.3 AN63.2
SR. NO.	**SUBTOPIC**		**COMPETENCY NUMBER**
	NAME	**DESCRIPTION**	
VIII HISTOLOGY			
VIII A GENERAL HISTOLOGY			**AN65 - AN72**
	CORE/ Y		
1	**Intro to lab techniques, Microscope, cell**	Microscopy and Types of microscopes and lab techniques for H & E staining	
		Cell: Organelles and cytoskeleton, Cell	
2	**Epithelium**	Features, classification, functions, cell surface modification, cell junctions, applied aspect	AN65.1
3	**Connective tissue**	Types - features with examples and functions, cells, matrix and clinical importance.	AN66.1
4	**Cartilage**	Cells, matrix, classification, each type - structure, example, function, applied aspect	AN71.2
5	**Bone**	Cells, matrix, classification, Each type - structure, function, applied aspect	AN71.1
6	**Muscle**	Classification, Each type - structure, ultrastructure, function, applied anatomy	AN67.1,2
7	**Nervous tissue**	Peripheral nerve - structure, coverings, functions	AN68.1,2
		Ganglia - types, cells, distribution	
8	**Blood vessels**	Layers, classification, Each type - structure, ultrastructure, function, applied anatomy	AN69.1,2,3
9	**Glands**	General glands - definition, classification with structure, function and examples	AN70.1
10	**Lymphoid tissue**	cells, classification, lymph node, Thymus , spleen, , MALT- palatine tonsil - structure, function	AN70.2
11	**Skin**	Types - features with examples and functions, Cells, appendages	AN72.1
	NON CORE/ N		
1	**Basic tissues**	Ultrastructure of epithelium, connective tissue, muscular tissue, nervous tissue	AN65.2, AN66.2, AN67.3, AN68.3

SR. NO.	SUBTOPIC		COMPETENCY NUMBER
	NAME	DESCRIPTION	
VIII HISTOLOGY			
VIII A SYSTEMIC HISTOLOGY			**AN9,25,43,52,64**
	CORE/ Y		
1	**Respiratory Histology**	Epiglottis, Trachea, lung - strucutre, function	AN25.1 AN43.2
2	**HFN Histology**	salivary glands - serous, mucous, mixed - structure, function and examples	AN43.2 AN52.1
		Tongue - strucutre, function, taste buds	
		Retina, Cornea - strucutre, function, cells	
		Endocrine system - Pituitary, Thyroid, parathyroid & suprarenal glands - strucutre, function, cells	
3	**Abdomen & Pelvis Histology**	GIT - strucutre, function, glands & cells - Oesophagus, Stomach-fundus, pylorus, small Intestine – Duodenum, Jejunum, ileum, Large intestine, appendix, Accessory glands- Liver, pancreas, gall bladder	AN52.1
		Urinary system - strucutre, function, cells - Kidney, ureter, urinary bladder	AN52.2 AN9.2
		Male reproductive system - strucutre, function, cells - Testis, Epididymis, Vas deferens, prostate, penis	
		Female reproductive system-Ovary, Fallopian tube, uterus, mammary gland, Cervix, Placenta & Umbilical cord	
4	**CNS Histology**	Cerebrum, Cerebellum & spinal cord	AN64.1
	NON CORE/ N		
1	**HFN Histology**	Strucutre, function - olfactory epithelium, eyelid, lip, sclero-corneal junction, optic nerve, cochlea- organ of corti, pineal gland	AN43.3
2	**Abdomen & Pelvis Histology**	Strucutre, function - Cardiooesophageal junction, Corpus luteum	AN52.3

SR. NO.	SUBTOPIC		COMPETENCY NUMBER
	NAME	DESCRIPTION	
IX EMBRYOLOGY			
IX A GENERAL EMBRYOLOGY			**AN76 - AN81**
	CORE/ Y		
1	**Introduction**	Stages of human life, terms- phylogeny, ontogeny, trimester, viability	AN76.1
2	**Gameto-genesis and fertilization**	Cell division – mitosis & meiosis. Stages & Changes - Spermatogenesis, Oogenesis wuth ovarian cycle	AN77.1-5
		Menstrual cycle - Stages & Changes	
		Fertilization - Process, barriers, effects, applied aspects	
		anatomical principles of contraception	
3	**1st week of development**	Zygote, cleavage, morula, blastocyst	AN78.1
4	**2nd week of development**	Implantation - Type, Process, decidual reaction, applied aspects	AN78.2-5
		Bilaminar embryonic disc, embryoblast,amniotic cavity, yolk sac,	
		Trophoblast , extra-embryonic mesoderm, chorion	
		anatomical principles of abortion, pregnancy test	
5	**3rd & 4th week of development**	Primitive streak, Gastrulation,Trilaminar embryonic disc, , notochord, development of neural tube, Neural crest cells, vasculogenesis.	AN79.1-4
		Folding of embryo – craniocaudal and lateral	
		Intraembryonic mesoderm & coelom	
		3 germ layers and derivatives	
6	**Foetal membrane**	Formation, functions & fate of chorion, amnion, allantois, umbilical cord.	AN80.1-5
		Placenta - Formation, functions, hormones, foetomaternal circulation, placental barrier and applied aspects	
		Embryological basis of twinning	
7	**Prenatal Diagnosis**	Various methods	AN81.1-3
		Indications, process and disadvantages of amniocentesis & chorion villous biopsy	

SR. NO.	SUBTOPIC		COMPETENCY NUMBER
	NAME	DESCRIPTION	
IX GENERAL EMBRYOLOGY			
	NON CORE/ N		
1	**1st week of development**	Teratogenic influences; fertility and sterility, surrogate motherhood, social significance of "sex-ratio".	AN77.6
2	**3rd to 8th week of development**	Embryological basis of congenital malformations, nucleus pulposus, sacrococcygeal teratomas, neural tube defects	AN79.5,6
		Diagnosis of pregnancy in first trimester and role of teratogens, alpha-fetoprotein	
3	**Foetal membrane**	Embryological basis of estimation of fetal age.	AN80.6,7
		Various types of umbilical cord attachments	

SR. NO.	SUBTOPIC		COMPETENCY NUMBER
	NAME	DESCRIPTION	
IX EMBRYOLOGY			
IX B SYSTEMIC EMBRYOLOGY			**AN9,13,20,25,43,52,64**
	CORE/ Y		
1	**Thorax**	Respiratory system - Development of lungs & Pleura	AN25.2-5
		Cardiovascular system - Development of heart - heart tube, 4 chambers, Septa and applied aspects - like ASD, VSD, Fallot's tertralogy,	
		Foetal & neonatal circulation	
2	**HFN**	development and congenital anomalies of Pharyngeal apparatus	AN43.4
		development and congenital anomalies of tongue, thyroid, face, palate, pituitary	
		development and congenital anomalies of eye	
3	**Abdomen & Pelvis**	Development and congenital anomalies of GIT – Foregut, midgut, hindgut derivatives	AN52.5-8
		Development and congenital anomalies of Diaphragm	
		Development and congenital anomalies of Kidney, ureter, bladder	
		Development and congenital anomalies of male and female reproductive system	
4	**Nervous system**	Development of neural tube, spinal cord, medulla oblongata, pons, midbrain, cerebral hemisphere & cerebellum	AN64.2
	NON CORE/ N		
1	**Limbs**	Development of upper limb, lower limb	AN13.8 AN20.10
2	**Breast**	Development of breast	AN9.3
3	**Thorax**	Development of aortic arch arteries, SVC, IVC and coronary sinus	AN25.6
4	**Abdomen**	Describe the development of anterior abdominal wall	AN52.4
5	**Nervous system**	Describe various types of open neural tube defects with its embryological basis	AN64.3

SR. NO.	SUBTOPIC		COMPETENCY NUMBER
	NAME	DESCRIPTION	
X GENETICS			**AN73 - AN75**
	CORE/ Y		
1	**Chromosomes**	Introduction, Mendel's Laws	AN73.1,2,3
		Chromosome - structure & classification, Karyotyping - process & application , Barr body, Lyon's hypothesis	
		Structural and numerical chromosomal aberrations	AN75.1
2	**Patterns of Inheritance**	Various modes of inheritance with examples, Pedigree charts, multifactorial inheritance	AN74.1,2,3
3	**Variation**	Genetic basis of: polymorphism and mutation	AN75.4
4	**Genetic Counseling**	Principles	AN75.5
	NON CORE/ N		
1	**Diseases & syndromes**	Genetic basis & clinical features of Achondroplasia, Cystic Fibrosis, Vitamin D resistant rickets, Haemophilia, Duchene's muscular dystrophy & Sickle cell anaemia, Prader Willi syndrome, Edward syndrome & Patau syndrome	AN74.4 AN75.3
2	**Cell lines**	Mosaicism and chimerism with example	AN75.2

SR. NO.	SUBTOPIC		COMPETENCY NUMBER
	NAME	DESCRIPTION	
XI RADIOLOGY			**AN13,20,25,43,54**
	CORE/ Y		
1	**Introduction**	Various imaging techniques with Principles of plain radiograms and CT scan, Ultrasonography, MRI	
2	**Upper limb**	Bones and joints seen in AP and lateral view radiographs of shoulder, elbow, wrist joints & hand	AN13.5
3	**Lower limb**	Bones and joints seen in AP and lateral view radiographs of hip, knee, ankle joints and foot	AN20.6
4	**Thorax**	Structures seen in a plain x-ray chest (PA view)	AN25.7
5	**Head, face, neck**	Structures seen in 1) Plain x-ray skull -AP and lateral view 2) Plain x-ray cervical spine-AP and lateral view 4) Plain x- ray of paranasal sinuses	AN43.7
6	**Abdomen & pelvis**	Structures seen in a plain x-ray abdomen	AN54.1,2
		Structures seen in contrast radiographs of Barium swallow, Barium meal, Barium enema, Cholecystography, Intravenous pyelography & Hysterosalpingography	
	NON CORE/ N		
1	**Head, face, neck**	anatomical route used for & structures seen in carotid angiogram and vertebral angiogram	AN43.8,9
2	**Abdomen & pelvis**	Describe role of ERCP, CT abdomen, MRI, Arteriography in radiodiagnosis of abdomen	AN54.3

SR. NO.	SUBTOPIC		COMPETENCY NUMBER
	NAME	DESCRIPTION	
XII LIVING ANATOMY			**AN10,13,17,18,20, 43**
	CORE/ Y		
1	**Upper limb**	Important bony landmarks : Jugular notch, sternal angle, acromial angle, spine of the scapula, vertebral level of the medial end, Inferior angle of the scapula	AN10.12 AN13.3,6,7
		Testing of muscles: Trapezius, pectoralis major, serratus anterior, latissimus dorsi, deltoid, biceps brachii, Brachioradialis	
		Movements of - Shoulder, elbow, radio-ulnar, wrist, 1st carpometacarpal joints	
		Palpation of radial, brachial arteries, ulnar nerve	
2	**Lower limb**	Important bony landmarks of : Vertebral levels of highest point of iliac crest, anterior & posterior superior iliac spines, iliac tubercle, pubic tubercle, Mid inguinal point, ischial tuberosity, adductor tubercle, Tibial tuberosity, head of fibula, Medial and lateral malleoli, Condyles of femur and tibia, sustentaculum tali, tuberosity of fifth metatarsal, tuberosity of the navicular	AN17.1 AN18.4 AN20.1,7,8,9
		Palpation of femoral, popliteal, posterior & anterior tibial, dorsalis pedis arteries and common peroneal nerve	
		Movements of - Hip, knee, ankle	
3	**HFN**	Location of hyoid bone, thyroid cartilage and cricoid cartilage with their vertebral levels	AN43.1,5
		Movements of atlantooccipital joint & atlantoaxial joint	
		Testing of muscles of facial expression, extraocular muscles, muscles of mastication,	
		Palpation of carotid arteries, facial artery, superficial temporal artery	

SR. NO.	SUBTOPIC		COMPETENCY NUMBER
	NAME	DESCRIPTION	
XIII SURFACE MARKING			**AN13,20,25,43,55**
	CORE/ Y		
1	**Upper limb**	Surface projection of:Cephalic and basilic vein,	AN13.7
2	**Lower limb**	Surface projection of: femoral nerve, Saphenous opening, Sciatic, tibial, common peroneal & deep peroneal nerve, Great and small saphenous veins	AN20.9
3	**Thorax**	Surface marking of lines of pleural reflection, lung borders and fissures, trachea,	AN25.9
		Surface marking of heart borders, apex beat & surface projection of valves of heart	
4	**Abdomen**	Surface marking of; Regions and planes of abdomen, Superficial inguinal ring, Deep inguinal ring , McBurney's point, Renal Angle & Murphy's point	AN55.1
		Surface projections of: Stomach, Liver, Fundus of gall bladder, Spleen, Duodenum, Pancreas, Ileocaecal junction, Kidneys & Root of mesentery	AN55.2
	NON CORE/ N		
1	**Head, face, neck**	Surface projection of Thyroid gland, Parotid gland and duct, Pterion,	AN43.6
		Surface projection of Common carotid artery, Internal jugular vein, Subclavian vein, External jugular vein, Facial artery in the face & accessory nerve	

SR. NO.	SUBTOPIC		COMPETENCY NUMBER
	NAME	DESCRIPTION	
XIV BIOETHICS			**AN82**
	CORE/ Y		
1	**Ethics**	Demonstrate respect and follow the correct procedure when handling cadavers and other biologic tissue	AN 82.1

Resolution No. 4.2 of Academic Council (AC-50/2024): Resolved to approve & accept the changes in the First MBBS Anatomy syllabus for the competencies from **MBBS 2024-25 Batch onwards.** **[ANNEXURE-22]**

COMPETENCY BASED UNDERGRADUATE CURRICULUM FOR THE INDIAN MEDICAL GRADUATE

ANATOMY (CODE: AN)

(Topics = 82, Competencies = 413)

Number	COMPETENCY The student should be able to	Predominant Domain K/S/A/C	Level K/KH/ S H/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P
Topic 1: Anatomical terminology							
AN1.1	**Describe** & Demonstrate normal anatomical position, various planes, relation, comparison, laterality & movements in the human body	K/S	SH	Y	LGT, Demonstration	Written/ Viva voce/ skill assessments	
AN1.2	Describe composition of bone and bone marrow	K	KH	Y	LGT	Written/ viva	
Topic 2: General features of bones & Joints							

AN2.1	Describe parts, types, peculiarities of each type, blood and nerve supply of bones.	K	KH	Y	LGT	Written/ viva voce	
AN2.2	Describe the laws of ossification, epiphysis, its various types and their importance	K	KH	N	LGT	Written/ Viva voce	
AN2.3	Describe special features of a sesamoid bone	K	KH	N	LGT, Demonstration	Written/ Viva voce	
AN2.4	Describe various types of cartilage with its structure & distribution in body	K	KH	Y	LGT, Demonstration	Written/ Viva voce	
AN2.5	Describe & demonstrate various joints with possible movements, subtypes and examples	K,S	SH	Y	LGT, Demonstration	Written/ Viva voce/skills assessment	
AN2.6	Explain the concept of nerve supply of joints & hilton's law	K	KH	Y	LGT, Demonstration	Written/ Viva voce	

Topic 3: General features of Muscle

AN3.1	Classify & describe muscle tissue according to structure, size, shape, region & action	K	KH	Y	LGT, Demonstration	Written/ Viva voce	
AN3.2	Describe parts of skeletal muscle and differentiate between tendons and aponeuroses with examples	K	KH	Y	LGT, Demonstration	Written/ Viva voce	
AN3.3	Explain Shunt and spurt muscles with examples and role in joint movement	K	KH	N	LGT, Demonstration	Written/ Viva voce	

Topic 4: General features of skin and fascia

AN4.1	Describe different types of skin & dermatomes in body	K	KH	N	LGT, Demonstration	Written/ Viva voce	
AN4.2	Describe & demonstrate structure of skin with its appendages along with clinical anatomy	K,S	SH	Y	LGT, Demonstration	Written/ Viva voce	
AN4.3	Describe structure, contents and identify modifications of superficial fascia along with fat distribution in body	K,S	SH	Y	LGT, Demonstration	Written/ Viva voce	
AN4.4	Describe & demonstrate modifications of deep fascia with its location, function & examples	K,S	SH	Y	LGT, Demonstration	Written/ Viva voce	
AN4.5	Explain principles of skin incisions and their surgical importance	K	KH	N	LGT, Demonstration	Written	

Topic 5: General features of the cardiovascular system

AN5.1	Differentiate between blood vascular and lymphatic system	K	KH	Y	LGT, Demonstration	Written/ Viva voce	
AN5.2	Differentiate between pulmonary and systemic circulation	K	KH	Y	LGT, Demonstration	Written/ Viva voce	
AN5.3	Describe general differences between arteries, veins and sinuses	K	KH	Y	LGT, Demonstration	Written/ Viva voce	
AN5.4	Explain functional and gross structural differences between elastic, muscular arteries and arterioles	K	KH	Y	LGT, Demonstration	Written/ Viva voce	
AN5.5	Describe portal system giving examples	K	KH	Y	LGT, Demonstration	Written/ Viva voce	
AN5.6	Describe the concept of anastomoses and collateral circulation, its different sites & significance of end arteries	K	KH	Y	LGT, Demonstration	Written/ Viva voce	
AN5.7	Explain function of meta-arterioles, precapillary sphincters, arterio-venous anastomoses	K	KH	N	LGT, Demonstration	Written/ Viva voce	
AN5.8	Describe thrombosis, infarction & aneurysm	K	KH	N	LGT, Demonstration	Written/ Viva voce	

Topic 6: General Features of lymphatic system

AN6.1	Describe the components and functions of the lymphatic system	K	KH	N	LGT, Demonstration	Written/ Viva voce	
AN6.2	Describe structure of lymph capillaries & mechanism of lymph circulation	K	KH	N	LGT, Demonstration	Written	
AN6.3	Explain the concept of lymphoedema and spread of tumors via lymphatics and venous system	K	KH	N	LGT, Demonstration	Written/ Viva voce	

Topic 7: Introduction to the nervous system

AN7.1	Describe general plan of nervous system with components of central, peripheral & autonomic nervous systems	K	KH	Y	LGT, Demonstration	Written/ Viva voce	
AN7.2	List components of nervous tissue and their functions	K	KH	Y	LGT, Demonstration	Written/ Viva voce	

AN7.3	Describe parts of a neuron and classify them based on number of neurites, size & function	K	KH	Y	LGT, Demonstration	Written/ Viva voce	
AN7.4	Describe structure of a typical spinal nerve	K	KH	Y	LGT, Demonstration	Written/ Viva voce	
AN7.5	Describe principles of sensory and motor innervation of muscles	K	KH	N	LGT, Demonstration	Written	
AN7.6	Describe concept of loss of innervation of a muscle with its applied anatomy	K	KH	Y	LGT, Demonstration	Written/ Viva voce	
AN7.7	Describe various types of synapse	K	KH	N	LGT, Demonstration	Written	

Topic 8: Features of individual bones (Upper Limb)

previous in 8.2 - 8.3

previous in 8.4 (lecture removed)

changed

8.5 -& 8.6 removed

AN8.1	Identify the given bone, its side, anatomical position, joint formation, important features and clinical anatomy (clavicle, scapula, humerus, radius , ulna, carpal bones)	K,S	SH	Y	Demonstration	Written/ Viva voce/ skill assessment	
AN8.2	Demonstrate important muscle attachments on the given bone	K,S	SH	Y	Demonstration	Written/ Viva voce/ skill assessment	
AN8.3	Identify and name various bones in articulated hand, Specify the parts of metacarpals and phalanges and enumerate the peculiarities of pisiform	K,S	SH	Y	Demonstration	Viva voce Practicals	
AN8.4	Describe scaphoid fracture and explain the anatomical basis of avascular necrosis	K	KH	N	LGT, Demonstration	Viva voce	

Topic 9: Pectoral region

AN9.1	Describe attachment, nerve supply & action of pectoralis major and pectoralis minor and describe clavipectoral fascia	K	KH	Y	LGT, Practical, Demonstration, Dissection	Written/ Viva voce	
AN9.2	Describe the location, extent, deep relations, structure, blood supply, lymphatic drainage, microanatomy and applied anatomy of breast	K	KH	Y	LGT	Written/ Viva voce	

AN9.3	Describe development of breast, associated age changes and congenital anomalies	K	KH	N	LGT, Demonstration	Written/ Viva voce	

Topic 10: Axilla, Shoulder and Scapular region

AN10.1	Identify & describe boundaries and contents of axilla	K,S	SH	Y	LGT, Practical, Demonstration, Dissection	Written/ Viva voce/ skill assessment	
AN10.2	Identify, describe and demonstrate the origin, extent, course, parts, relations and branches of axillary artery & tributaries of axillary vein	K,S	SH	Y	LGT, Practical, Demonstration, Dissection	Written/ Viva voce/ skill assessment assessment	
AN10.3	Describe, identify and demonstrate formation, branches, relations, area of supply of branches, course and relations of terminal branches of brachial plexus	K,S	SH	Y	LGT, Practical, Demonstration, Dissection	Written/ Viva voce/ skill assessment	
AN10.4	Describe the anatomical groups of axillary lymph nodes and specify their areas of drainage	K	KH	Y	LGT, Practical, Demonstration, Dissection	Written/ Viva voce/ skill assessment	
AN10.5	Explain variations in formation of brachial plexus	K	KH	Y	LGT, Practical, Demonstration, Dissection	Written/ Viva voce	
AN10.6	Explain the anatomical basis of clinical features of Erb's palsy and Klumpke's paralysis	K	KH	Y	LGT, Demonstration	Written/ Viva voce	
AN10.7	Describe axillary lymph nodes, areas of drainage and anatomical basis of their enlargement	K	KH	Y	LGT, Practical, Demonstration, Dissection	Written	
AN10.8	Describe, identify and demonstrate the position, attachment, nerve supply and actions of trapezius and latissimus dorsi	K,S	SH	Y	LGT, Practical, Demonstration, Dissection	Written/ Viva voce/ skill assessment	
AN10.9	Describe the arterial anastomosis around the scapula and mention the boundaries of triangle of auscultation	K	KH	N	LGT, Practical, Demonstration, Dissection	Written	

AN10.10	Describe and identify the deltoid and rotator cuff muscles along with their nerve supply and clinical anatomy	K,S	SH	Y	LGT, Practical, Demonstration, Dissection	Written/ Viva voce/ skill assessment	
AN10.11	Describe & demonstrate attachment, action and clinical anatomy of serratus anterior muscle	K,S	SH	Y	LGT, Practical, Demonstration, Dissection	Written/ Viva voce/ skill assessment	
AN10.12	Describe and demonstrate shoulder joint for type, articular surfaces, capsule, synovial membrane, ligaments, relations, movements, muscles involved, blood supply, nerve supply and applied anatomy	K,S	SH	Y	LGT, Practical, Demonstration, Dissection	Written/ Viva voce/ skill assessment	
AN10.13	Explain anatomical basis of Injury to axillary nerve during intramuscular injections	K	KH	Y	LGT	Viva voce	

Topic 11: Arm & Cubital fossa

AN11.1	Describe and demonstrate muscle groups of upper arm with emphasis on biceps and triceps brachii	K,S	SH	Y	LGT, Practical, Demonstration, Dissection	Written/ Viva voce/ skill assessment	
AN11.2	Identify & describe origin, course, relations, branches (or tributaries), termination of important nerves and vessels in arm	K,S	SH	Y	LGT, Practical, Demonstration, Dissection	Written/ Viva voce/ skill assessment	
AN11.3	Describe the anatomical basis of Venipuncture of cubital veins	K	KH	Y	LGT, Demonstration	Written/ Viva voce	
AN11.4	Describe the anatomical basis of Saturday night paralysis	K	KH	Y	LGT, Demonstration	Written/ Viva voce	
AN11.5	Identify & describe boundaries and contents of cubital fossa	K,S	SH	Y	LGT, Practical, Demonstration, Dissection	Written/ Viva voce/ skill assessment	
AN11.6	Describe the anastomosis around the elbow joint	K	KH	N	LGT	Written	

Topic 12: Forearm & hand

AN12.1	Describe and demonstrate important muscle groups of ventral forearm with attachments, nerve supply and actions	K,S	SH	Y	LGT, Practical, Demonstration, Dissection	Written/ Viva voce/ skill assessment	
AN12.2	Identify & describe origin, course, relations, branches (or tributaries), termination of important nerves and vessels of forearm	K,S	SH	Y	LGT, Practical, Demonstration, Dissection	Written/ Viva voce/ skill assessment	
AN12.3	Identify & describe flexor retinaculum with its attachments	K,S	SH	Y	LGT, Practical, Demonstration, Dissection	Written/ Viva voce/ skill assessment	
AN12.4	Explain anatomical basis of carpal tunnel syndrome	K	KH	Y	LGT, Demonstration	Written/ Viva voce	
AN12.5	Identify & describe small muscles of hand. Also describe movements of thumb and muscles involved	K,S	SH	Y	LGT, Practical, Demonstration, Dissection	Written/ Viva voce/ skill assessment	
AN12.6	Describe & demonstrate movements of thumb and muscles involved	K,S	SH	Y	Practical, Demonstration	Written/ Viva voce/ skill assessment	
AN12.7	Identify & describe course and branches of important blood vessels and nerves in hand	K,S	SH	Y	LGT, Practical, Demonstration, Dissection	Written/ Viva voce/ skill assessment	
AN12.8	Describe anatomical basis of Claw hand	K	KH	Y	LGT, Demonstration, Practical	Written/ Viva voce	
AN12.9	Identify & describe fibrous flexor sheaths, ulnar bursa, radial bursa and digital synovial sheaths	K,S	SH	Y	LGT, Practical, Demonstration, Dissection	Written/ Viva voce	
AN12.10	Explain infection of fascial spaces of palm	K	KH	N	LGT	Written	
AN12.11	Identify, describe and demonstrate important muscle groups of dorsal forearm with attachments, nerve supply and actions	K,S	SH	Y	LGT, Practical, Demonstration, Dissection	Written/ Viva voce/ skill assessment	

AN12.12	Identify & describe origin, course, relations, branches (or tributaries), termination of important nerves and vessels of back of forearm	K,S	SH	Y	LGT, Practical, Demonstration, Dissection	Written/ Viva voce/ skill assessment	
AN12.13	Describe the anatomical basis of Wrist drop	K	KH	Y	LGT, Demonstration	Written/ Viva voce	
AN12.14	Identify & describe compartments deep to extensor retinaculum and describe the boundaries and contents of anatomical snuff box.	K,S	SH	Y	LGT, Practical, Demonstration, Dissection	Written/ Viva voce/ skill assessment	
AN12.15	Identify & describe extensor expansion formation	K,S	SH	Y	LGT, Practical, Demonstration, Dissection	Written/ Viva voce/ skill assessment	

Topic 13: General Features, Joints, radiographs & surface marking

AN13.1	Describe and explain Fascia of upper limb and compartments, veins of upper limb and its lymphatic drainage	K	KH	Y	LGT, demonstration	Written/ Viva voce	
AN13.2	Describe dermatomes of upper limb	K	KH	N	LGT	Written/ Viva voce	
AN13.3	Identify & describe the type, articular surfaces, capsule, synovial membrane, ligaments, relations, movements, blood and nerve supply of elbow joint, proximal and distal radio-ulnar joints, wrist joint & first carpometacarpal joint	K,S	SH	Y	LGT, Practical, Demonstration, Dissection	Written/ Viva voce/ skill assessment	
AN13.4	Describe Sternoclavicular joint, Acromioclavicular joint, Carpometacarpal joints & Metacarpophalangeal joint	K	KH	N	LGT, Practical, Demonstration	Written/ Viva voce/ skill assessment	
AN13.5	Identify the bones and joints of upper limb seen in anteroposterior and lateral view radiographs of shoulder region, arm, elbow, forearm and hand	K,S	SH	Y	LGT, Practical, Demonstration	Viva voce/ skill assessment	
AN13.6	Identify & demonstrate important bony landmarks of upper limb: Jugular notch, sternal angle, acromial angle, spine of the scapula, vertebral level of the medial end and Inferior angle of the scapula	K,S	SH	Y	Practical, Demonstration	Viva voce/ skill assessment	

AN13.7	Identify & demonstrate surface projection of: Cephalic and basilic vein, Palpation of Brachial artery, Radial artery, Testing of muscles: Trapezius, pectoralis major, serratus anterior, latissimus dorsi, deltoid, biceps brachii, Brachioradialis	K,S	SH	Y	Practical, Demonstration	Viva voce/ skill assessment	
AN13.8	Describe development of upper limb	K	KH	N	LGT	Written	

Topic 14: Features of individual bones (Lower Limb)

AN14.1	Identify the given bone, its side, anatomical position, joint formation, important features and clinical anatomy (hip bone, femur, tibia fibula, tarsal bones)	K,S	SH	Y	Demonstration	Viva voce	
AN14.2	Identify & describe joints formed by the given bone	K,S	SH	Y	LGT, Demonstration	Viva voce	
AN14.3	Describe the importance of ossification of lower end of femur & upper end of tibia, and explain violation of law of ossification in fibula	K	KH	Y	LGT, Demonstration	Viva voce	
AN14.4	Identify and name various bones in the articulated foot with individual muscle attachment	K,S	SH	N	LGT, Demonstration	Viva voce	

Topic 15: Front & Medial side of thigh

AN15.1	Describe and demonstrate origin, course, relations, branches (or tributaries), termination of important nerves and vessels of anterior thigh	K,S	SH	Y	LGT, Dissection, Practical, Demonstration	Written/ Viva voce/ skill assessment	
AN15.2	Describe and demonstrate major muscles with their attachment, nerve supply and actions	K,S	SH	Y	LGT, Dissection, Practical, Demonstration	Written/ Viva voce/ skill assessment	
AN15.3	Describe and demonstrate boundaries, floor, roof and contents of femoral triangle	K,S	SH	Y	LGT, Dissection, Practical, Demonstration	Written/ Viva voce/ skill assessment	
AN15.4	Explain anatomical basis of Psoas abscess & Femoral hernia	K	KH	N	LGT, Demonstration	Written/ Viva voce	

AN15.5	Describe and demonstrate adductor canal with its contents	K,S	SH	Y	LGT, Demonstration	Written/ Viva voce/ skill assessment	

Topic 16: Gluteal region & back of thigh

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AN16.1	Describe and demonstrate major muscles with their attachment, nerve supply and actions.	K,S	SH	Y	Dissection, LGT, SGT, Demonstration	Written/ Viva voce/ skill assessment	
AN16.2	Describe and demonstrate structures under the cover of gluteus maximus. Also explain the anatomical basis of sciatic nerve injury during gluteal intramuscular injections	K,S	SH	Y	Dissection, LGT, SGT, Demonstration	Written/ Viva voce/ skill assessment	
AN16.3	Explain the anatomical basis of Trendelenburg sign	K	KH	Y	LGT, Demonstration	Written/ Viva voce	
AN16.4	Describe and demonstrate the hamstrings group of muscles with their attachment, nerve supply and actions	K,S	SH	Y	Dissection, LGT, SGT, Demonstration	Written/ Viva voce/ skill assessment	
AN16.5	Describe and demonstrate the origin, course, relations, branches (or tributaries), termination of important nerves and vessels on the back of thigh	K,S	SH	Y	Dissection, LGT, SGT, Demonstration	Written/ Viva voce/ skill assessment	
AN16.6	Describe and demonstrate the boundaries, roof, floor, contents and relations of popliteal fossa with its clinical anatomy	K,S	SH	Y	Dissection, LGT, SGT, Demonstration	Written/ Viva voce/ skill assessment	

Topic 17: Hip Joint

AN17.1	Describe and demonstrate the type, articular surfaces, capsule, synovial membrane, ligaments, relations, movements and muscles involved, blood and nerve supply, bursae around the hip joint	K,S	SH	Y	Dissection, LGT, SGT, Demonstration	Written/ Viva voce/ skill assessment	
AN17.2	Describe anatomical basis of complications of fracture neck of femur	K	KH	N	LGT, Demonstration	Written/ Viva voce	
AN17.3	Describe dislocation of hip joint and surgical hip replacement	K	KH	N	LGT, Demonstration	Written/ Viva voce	

Topic 18: Knee joint, Anterior compartment of leg & dorsum of foot

AN18.1	Describe and demonstrate major muscles of anterior compartment of leg with their attachment, nerve supply and actions	K,S	SH	Y	Dissection, LGT, SGT, Demonstration	Written/ Viva voce/ skill assessment	
AN18.2	Describe and demonstrate origin, course, relations, branches (or tributaries), termination of important nerves and vessels of anterior compartment of leg	K,S	SH	Y	Dissection, LGT, SGT, Demonstration	Written/ Viva voce/ skill assessment	
AN18.3	Explain the anatomical basis of foot drop	K	KH	Y	LGT, Demonstration	Written/ Viva voce	
AN18.4	Describe and demonstrate the type, articular surfaces, capsule, synovial membrane, ligaments, relations, movements and muscles involved, nerve supply, bursae around the knee joint along with anastomosis around the knee joint	K,S	SH	Y	Dissection, LGT, SGT, Demonstration	Written/ Viva voce/ skill assessment	
AN18.5	Explain the anatomical basis of locking and unlocking of the knee joint	K	KH	Y	LGT, Demonstration, Practical	Written/ Viva voce	
AN18.6	Describe knee joint injuries with its applied anatomy	K	KH	N	LGT, Demonstration	Written/ Viva voce	
AN18.7	Explain anatomical basis of Osteoarthritis	K	KH	N	LGT	Written/ Viva voce	

Topic 19: Back of Leg & Sole

AN19.1	Describe and demonstrate the major muscles of back of leg with their attachment, nerve supply and actions	K,S	SH	Y	Dissection, LGT, SGT, Demonstration	Written/ Viva voce/ skill assessment	
AN19.2	Describe and demonstrate the origin, course, relations, branches (or tributaries), termination of important nerves and vessels of back of leg	K,S	SH	Y	Dissection, LGT, SGT, Demonstration	Written/ Viva voce/ skill assessment	
AN19.3	Explain the concept of "Peripheral heart"	K	KH	Y	LGT	Written/ Viva voce	

AN19.4	Explain the anatomical basis of rupture of calcaneal tendon	K	KH	N	LGT	Written/ Viva voce	
AN19.5	Describe factors maintaining importance arches of the foot with its importance	K	KH	Y	LGT	Written/ Viva voce	
AN19.6	Explain the anatomical basis of Flat foot & Club foot	K	KH	N	LGT	Written/ Viva voce	
AN19.7	Explain the anatomical basis of Metatarsalgia & Plantar fasciitis	K	KH	N	LGT	Written/ Viva voce	

Topic 20: General Features, Joints, radiographs & surface marking

AN20.1	Describe and demonstrate the type, articular surfaces, capsule, synovial membrane, ligaments, relations, movements and muscles involved, blood and nerve supply of tibiofibular and ankle joint	K,S	SH	Y	Dissection, LGT, SGT, Demonstration, Practical	Written/ Viva voce/ skill assessment	
AN20.2	Describe the subtalar and transverse tarsal joints	K	KH	N	LGT, Demonstration	Written/ Viva voce	
AN20.3	Describe and demonstrate Fascia lata, Venous drainage, Lymphatic drainage, Retinacula & Dermatomes of lower limb	K,S	SH	Y	LGT, Demonstration, Dissection, Practical	Written/ Viva voce/ skill assessment	
AN20.4	Explain anatomical basis of enlarged inguinal lymph nodes	K	KH	N	LGT	Written/ Viva voce	
AN20.5	Explain anatomical basis of varicose veins and deep vein thrombosis	K	KH	Y	LGT, Demonstration	Written/ Viva voce	
AN20.6	Identify the bones and joints of lower limb seen in anteroposterior and lateral view radiographs of various regions of lower limb	K/S	SH	Y	LGT, SGT, Demonstration	Viva voce/ skill assessment	

	AN20.7	Identify & demonstrate important bony landmarks of lower limb: Vertebral levels of highest point of iliac crest, posterior superior iliac spines, iliac tubercle, pubic tubercle, ischial tuberosity, adductor tubercle, -Tibial tuberosity, head of fibula, -Medial and lateral malleoli, Condyles of femur and tibia, sustentaculum tali, tuberosity of fifth metatarsal, tuberosity of the navicular	K,S	SH	Y	Practical, LGT, SGT, Demonstration	Viva voce/ skill assessment	
	AN20.8	Identify & demonstrate palpation of femoral, popliteal, posterior tibial, anterior tibial & dorsalis pedis arteries in a simulated environment	K,S	SH	Y	Practical, LGT, SGT, Demonstration	Viva voce/ skill assessment	
	AN20.9	Demonstrate surface projection of: femoral, popliteal, dorsalis pedis, post tibial arteries, Mid inguinal point, femoral nerve, Saphenous opening, Sciatic, tibial, common peroneal & deep peroneal nerve, Great and small saphenous veins	K,S	SH	Y	Practical, LGT, SGT, Demonstration	Viva voce/ skill assessment	
	AN20.10	Describe basic concept of development of lower limb	K	KH	N	LGT	Viva voce	
		Topic 21: Thoracic cage						
removed first rib	AN21.1	Identify and describe the salient features of sternum, typical rib and typical thoracic vertebra.	K,S	SH	Y	LGT, Dissection, Practical, Demonstration	Viva voce/ skill assessment	
all atypical ribs and all atypical thoracic vertebrae	AN21.2	Identify & describe the features of atypical ribs and atypical thoracic vertebrae.	K,S	SH	N	LGT, Dissection, Practical, Demonstration	Viva voce/ skill assessment	
	AN21.3	Describe & demonstrate the boundaries of thoracic inlet, cavity and outlet along with its applied aspect.(Thoracic inlet Syndrome)	K/S	SH	Y	LGT, Demonstration	Written/ Viva voce/ skill assessment	
	AN21.4	Describe & demonstrate extent, attachments, direction of fibres, nerve supply and actions of intercostal muscles	K,S	SH	Y	LGT, Dissection Practical, Demonstration ,	Written/ Viva voce/ skill assessment	

AN21.5	Describe & demonstrate origin, course, relations and branches of a typical intercostal nerve	K,S	SH	Y	LGT, Dissection, Practical, Demonstration	Written/ Viva voce/ skill assessment	
AN21.6	Mention origin, course and branches/ tributaries of:1) anterior & posterior intercostal vessels 2) internal thoracic vessels	K	KH	Y	LGT, Dissection, Practical, Demonstration	Written/ Viva voce	
AN21.7	Mention the origin, course, relations and branches of 1) atypical intercostal nerve. 2) superior intercostal artery, subcostal artery	K	KH	N	LGT, Dissection, Practical, Demonstration	Written	
AN21.8	Describe & demonstrate type, articular surfaces & movements of manubriosternal, costovertebral, costotransverse and xiphisternal joints	K,S	SH	N	LGT, Demonstration, Dissection, Practical	Written/ Viva voce/ skill assessment	
AN21.9	Describe & demonstrate mechanics and types of respiration	K,S	SH	Y	Demonstration, Dissection, Practical	Written/ Viva voce/ skill assessment	
AN21.10	Describe costochondral and interchondral joints	K	KH	N	LGT, Demonstration, Dissection, Practical	Written/ Viva voce	
AN21.11	Mention boundaries and contents of the superior, anterior, middle and posterior mediastinum	K	KH	Y	LGT, Demonstration, Dissection	Written/ Viva voce	
Topic 22: Heart & Pericardium							
AN22.1	Describe & demonstrate subdivisions, sinuses in pericardium, blood supply and nerve supply of pericardium	K,S	SH	Y	LGT, Demonstration, Dissection, Practical	Written/ Viva voce/ skill assessment	

AN22.2	Describe & demonstrate external and internal features of each chamber of heart	K,S	SH	Y	LGT, Demonstration, Dissection, Practical	Written/ Viva voce/ skill assessment	
AN22.3	Describe & demonstrate origin, course and branches of coronary arteries	K,S	SH	Y	LGT, Demonstration, Dissection, Practical	Written/ Viva voce/ skill assessment	
AN22.4	Describe anatomical basis of ischaemic heart disease	K	KH	Y	LGT, Demonstration	Written/ Viva voce	
AN22.5	Describe & demonstrate the formation, course, tributaries and termination of coronary sinus	K,S	SH	Y	LGT, Demonstration	Written/ Viva voce/ skill assessment	
AN22.6	Describe the fibrous skeleton of heart	K	KH	Y	LGT	Written	
AN22.7	Mention the parts, position and arterial supply of the conducting system of heart	K	KH	Y	LGT	Written/ Viva voce	
Topic 23: Mediastinum							
AN23.1	Describe and demonstrate the external appearance,relation,blood supply ,nerve supply,lymphatic drainage and applied anatomy of oesophagus	K,S	SH	Y	LGT,Demonstration	Written/ Viva voce/ skill assessment	
AN23.2	Describe & demonstrate the extent, relations and tributaries of thoracic duct and enumerate its applied anatomy.	K,S	SH	Y	LGT	Written/ Viva voce/ skill assessment	
AN23.3	Describe & demonstrate origin, course, relations, tributaries and termination of superior vena cava, azygos, hemiazygos and accessory hemiazygos veins	K,S	SH	Y	LGT, Demonstration Dissection, Practical ,	Written/ Viva voce/ skill assessment	

	AN23.4	Mention the extent, branches and relations of arch of aorta & descending thoracic aorta	K	KH	Y	LGT, Demonstration, Dissection, Practical	Written/ Viva voce	
	AN23.5	Identify & Mention the location and extent of thoracic sympathetic chain	K,S	SH	Y	LGT, Demonstration, Dissection, Practical	Written/ Viva voce/ skill assessment	
AN23.7 Removed	AN23.6	Describe the splanchnic nerves	K	KH	N	LGT	Written	
	Topic 24: Lungs & Trachea							
	AN24.1	Mention the blood supply, lymphatic drainage and nerve supply of pleura, extent of pleura and describe the pleural recesses and their applied anatomy	K	KH	Y	LGT, Demonstration, Dissection, Practical	Written/ Viva voce	
	AN24.2	Identify side, external features and relations of structures which form root of lung & bronchial tree and their clinical correlate	K,S	SH	Y	LGT, Demonstration,Dissection, Practical	Written/ Viva voce/ skill assessment	
	AN24.3	Describe a bronchopulmonary segment with its clinical anatomy	K	KH	Y	LGT, Demonstration	Written/ Viva voce	
	AN24.4	Identify phrenic nerve & describe its formation & distribution	K,S	SH	Y	LGT, Demonstration	Written/ Viva voce	
	AN24.5	Mention the blood supply, lymphatic drainage and nerve supply of lungs	K	KH	Y	LGT, Demonstration, Dissection, Practical	Written/ Viva voce	

AN24.6	Describe the extent, length, relations, blood supply, lymphatic drainage and nerve supply of trachea	K	KH	N	LGT, Demonstration	Written	
Topic 25: Thorax							
AN25.1	Identify, draw and label a slide of trachea and lung	K,S	SH	Y	LGT, Demonstration, Practical	Written/ skill assessment	
AN25.2	Describe development of pleura, lung & heart	K	KH	Y	LGT	Written	
AN25.3	Describe fetal circulation and changes occurring at birth	K	KH	Y	LGT, Demonstration	Written	
AN25.4	Describe embryological basis of: 1) atrial septal defect, 2) ventricular septal defect, 3) fallot's tetralogy & 4) tracheoesophageal fistula	K	KH	Y	LGT	Written/ Viva voce	
AN25.5	Describe developmental basis of congenital anomalies, transposition of great vessels, dextrocardia, patent ductus arteriosus and coarctation of aorta	K	KH	Y	LGT	Written/ Viva voce	
AN25.6	Mention development of aortic arch arteries, SVC, IVC and coronary sinus	K	KH	N	LGT	Written/ Viva voce	
AN25.7	Identify structures seen on a plain x-ray chest (PA view)	K,S	SH	Y	LGT, Demonstration, Practical	Written/ Viva voce	
AN25.8	Identify and describe in brief a barium swallow	K,S	SH	N	LGT, Demonstration, Practical	Written/ Viva voce	
AN25.9	Demonstrate surface marking of lines of pleural reflection, lung borders and fissures, trachea, heart borders, apex beat & surface projection of valves of heart	K,S	SH	Y	Demonstration, Practical	Viva voce/ skill assessment	
Topic 26: Skull osteology							
AN26.1	Describe & demonstrate anatomical position of skull, Identify and locate individual skull bones in skull	K,S	SH	Y	LGT, Demonstration	Viva voce/ skill assessment	

AN26.2	Describe & demonstrate the features of norma frontalis, verticalis, occipitalis, lateralis and basalis	K,S	SH	Y	LGT, Demonstration	Viva voce/ skill assessment	
AN26.3	Describe & demonstrate cranial cavity, its subdivisions, foramina and structures passing through them	K,S	SH	Y	LGT, Demonstration	Viva voce/ skill assessment	
AN26.4	Describe & demonstrate morphological features of mandible	K,S	SH	Y	LGT, Demonstration	Viva voce/ skill assessment	
AN26.5	Describe & demonstrate features of typical and atypical cervical vertebrae (atlas and axis)	K,S	SH	Y	LGT, Demonstration	Viva voce/ skill assessment	
AN26.6	Explain the concept of bones that ossify in membrane	K	KH	N	LGT	Viva voce	
AN26.7	Describe & demonstrate the features of the 7th cervical vertebra	K,S	SH	N	LGT, Demonstration	Viva voce	
topic :- Scalp							
AN27.1	Describe & demonstrate the layers of scalp, its blood supply, nerve supply and surgical importance.	K,S	SH	Y	LGT, Practical, Demonstration,Dissection	Written/ Viva voce/ skill assessment	
AN27.2	Describe emissary veins with its role in the spread of infection from extracranial route to intracranial venous sinuses	K	KH	Y	LGT, Practical, Demonstration,Dissection	Written	
Topic 28: Face & parotid region							
AN28.1	Describe & demonstrate muscles of facial expression and their nerve supply	K,S	SH	Y	LGT, Practical,Demonstration,Dissection	Written/ Viva voce/ skill assessment	
AN28.2	Describe sensory innervation of face	K	KH	Y	LGT, Demonstration	Written/ Viva voce	

	AN28.3	Describe & demonstrate origin /formation, course, branches /tributaries of facial vessels	K,S	SH	Y	LGT, Practical, Demonstration,Dissection	Written/ Viva voce/ skill assessment	
	AN28.4	Describe & demonstrate branches of facial nerve with distribution	K,S	SH	Y	LGT, Practical, Demonstration,Dissection	Written/ Viva voce/ skill assessment	
	AN28.5	Describe cervical lymph nodes and lymphatic drainage of head, face and neck	K	KH	Y	LGT	Written/ Viva voce	
	AN28.6	Identify superficial muscles of face, their nerve supply and actions	K,S	SH	Y	LGT, Practical, Demonstration,Dissection	Written/ Viva voce/ skill assessment	
	AN28.7	Explain the anatomical basis of facial nerve palsy	K	KH	Y	LGT	Written	
	AN28.8	Explain surgical importance of deep facial vein	K	KH	Y	LGT	Written	
	AN28.9	Describe & demonstrate the parts, borders, surfaces, contents, relations and nerve supply of parotid gland with course of its duct and surgical importance	K,S	SH	Y	LGT, Practical,Demonstration,Dissection	Written/ Viva voce/ skill assessment	
	AN28.10	Explain the anatomical basis of frey's syndrome	K	KH	N	LGT	Written	
	Topic 29: Posterior triangle of neck							
29.1 changed to 29.2	New added AN29.1	Describe and demonstrate the boundaries, subdivisions and contents of posterior triangle of neck	K, S	SH	Y	LGT, Practical,Demonstration,Dissection	Written/ Viva voce/ skill assessment	
	AN29.2	Describe & demonstrate attachments, nerve supply, relations and actions of sternocleidomastoid	K,S	SH	Y	LGT, Practical, Demonstration,Dissection	Written/ Viva voce/ skill assessment	
	AN29.3	Explain anatomical basis of & Erb's, klumpke's palsy	K	KH	Y	LGT, Demonstration	Written	
	AN29.4	Explain anatomical basis of wry neck	K	KH	N	LGT, Demonstration	Written	

AN29.5	Describe & demonstrate attachments of 1) inferior belly of omohyoid, 2)scalenus anterior, 3) scalenus medius & 4) levator scapulae	K,S	SH	N	LGT, Practical, Demonstration,Dissection	Written/ Viva voce	
Topic: 30 Cranial cavity							
AN30.1	Describe the cranial fossae & identify related structures	K,S	SH	Y	LGT, Practical, Demonstration,Dissection	Written/ Viva voce/ skill assessment	
AN30.2	Describe & identify major foramina with structures passing through them	K,S	SH	Y	LGT, Practical,Demonstration,Dissection	Written/ Viva voce/ skill assessment	
AN30.3	Describe & identify dural folds & dural venous sinuses	K,S	SH	Y	LGT, Practical, Demonstration,Dissection	Written/ Viva voce/ skill assessment	
AN30.4	Describe clinical importance of dural venous sinuses	K	KH	Y	LGT	Written	
AN30.5	Explain effect of pituitary tumours on visual pathway	K	KH	N	LGT	Written	
Topic 31: Orbit							
AN31.1	Describe & identify extra ocular muscles of eyeball, along with a note on its attachment, action and clinical anatomy	K,S	SH	Y	LGT, Practical, Demonstration,Dissection	Written/ Viva voce/ skill assessment	
AN31.2	Describe & demonstrate nerves and vessels in the orbit	K,S	SH	Y	LGT, Practical, Demonstration,Dissection	Written/ Viva voce/ skill assessment	
AN31.3	Describe anatomical basis of horner's syndrome	K	KH	N	LGT	Written	
AN31.4	Describe the components of lacrimal apparatus	K	KH	Y	LGT	Written	
AN31.5	Explain the anatomical basis of oculomotor, trochlear and abducent nerve palsies along with strabismus	K	KH	Y	LGT	Written	
Topic 32: Anterior Triangle							

AN32.1	Describe boundaries and subdivisions of anterior triangle	K	KH	Y	LGT	Written/ Viva voce	
AN32.2	Describe & demonstrate boundaries and contents of muscular, carotid, digastric and submental triangles	K,S	SH	Y	LGT, Practical, Demonstration, Dissection	Written/ Viva voce/ skill assessment	
Topic 33: Temporal and Infratemporal regions							
AN33.1	Describe & demonstrate extent, boundaries and contents of temporal and infratemporal fossae	K,S	SH	Y	LGT, Practical, Demonstration, Dissection	Written/ Viva voce/ skill assessment	
AN33.2	Describe & demonstrate attachments, direction of fibres, nerve supply and actions of muscles of mastication	K,S	SH	Y	LGT, Practical, Demonstration, Dissection	Written/ Viva voce/ skill assessment	
AN33.3	Describe & demonstrate articulating surface, type & movements of temporomandibular joint	K,S	SH	Y	LGT, Practical, Demonstration, Dissection	Written/ Viva voce/ skill assessment	
AN33.4	Explain the clinical significance of pterygoid venous plexus	K	KH	Y	LGT	Written	
AN33.5	Describe the features of dislocation of temporomandibular joint	K	KH	N	LGT	Written	
Topic 34: Submandibular region							
New added AN34.1	Describe and demonstrate the superficial and deep structures, muscles, nerves, vessels, and glands in the submandibular region	K,S	SH	Y	LGT, Dissection, Practical, Demonstration	Written/Viva / Skill assessment	
AN34.2	Describe & demonstrate the morphology, relations and nerve supply of submandibular salivary gland & submandibular ganglion	K,S	SH	Y	LGT, Practical, Demonstration, Dissection	Written/ Viva voce/ skill assessment	
AN34.3	Describe the basis of formation of submandibular stones	K	KH	N	LGT	Written	
Topic 35: Deep structures in the neck							
AN35.1	Describe the parts, extent, attachments, modifications of deep cervical fascia	K	KH	Y	LGT	Written	

AN35.2	Describe & demonstrate location, parts, borders, surfaces, relations, blood supply & applied anatomy of thyroid gland. Also describe the parathyroid glands in brief.	K,S	SH	Y	LGT, Practical, Demonstration, Dissection	Written/ Viva voce/ skill assessment	
AN35.3	Demonstrate & describe the origin, parts, course & branches subclavian artery	K,S	SH	Y	LGT, Practical, Demonstration, Dissection	Written/ Viva voce/ skill assessment	
AN35.4	Describe & demonstrate origin, course, relations, tributaries and termination of internal jugular & brachiocephalic veins	K,S	SH	Y	LGT, Practical, Demonstration, Dissection	Written/ Viva voce/ skill assessment	
AN35.5	Describe and demonstrate extent, drainage & applied anatomy of cervical lymph nodes	K,S	SH	Y	LGT, Practical, Demonstration, Dissection	Written/ Viva voce/ skill assessment	
AN35.6	Describe and demonstrate the extent, formation, relation & branches of cervical sympathetic chain	K,S	SH	Y	LGT, Practical, Demonstration, Dissection	Written/ Viva voce/ skill assessment	
AN35.7	Describe the course and branches of IX, X, XI & XII nerve in the neck	K	KH	Y	LGT	Written	
AN35.8	Describe the anatomically relevant clinical features of Thyroid swellings	K	KH	N	LGT, Demonstration	Written	
AN35.9	Describe the clinical features of compression of subclavian artery and lower trunk of brachial plexus by cervical rib	K	KH	N	LGT	Written	
AN35.10	Describe the fascial spaces of neck	K	KH	N	LGT	Written	
Topic 36: Mouth, Pharynx & Palate							
New added AN36.1	Describe and demonstrate the structures of the vestibule of the mouth and oral cavity proper.	K,S	SH	Y	LGT, Practical, Demonstration, Dissection	Written/ Viva voce/ skill assessment	
AN36.2	Describe the 1) morphology, relations, blood supply and applied anatomy of palatine tonsil 2) composition of soft palate	K	KH	Y	LGT, Practical, Demonstration, Dissection	Written	

New added AN36.3	Describe and demonstrate the muscles, nerve supply, blood supply and lymphatic drainage of the pharynx	K,S	SH	Y	LGT, Practical, Demonstration, Dissection	Written/ Viva voce/ skill assessment	
AN36.4	Describe the components and functions of lymphatic waldeyer's ring	K	KH	Y	LGT	Written	
AN36.5	Describe the pharyngeal spaces. Also describe the boundaries and clinical significance of pyriform fossa	K	KH	N	LGT	Written	
AN36.6	Describe the anatomical basis of tonsillitis, tonsillectomy, adenoids and peri-tonsillar abscess	K	KH	N	LGT	Written	
AN36.7	Describe the clinical significance of killian's dehiscence	K	KH	N	LGT	Written	
Topic 37: Cavity of Nose							
AN37.1	Describe & demonstrate features of nasal septum, lateral wall of nose, their blood supply and nerve supply	K,S	SH	Y	LGT, Practical, Demonstration, Dissection	Written/ Viva voce/ skill assessment	
AN37.2	Describe location and functional anatomy of paranasal sinuses	K	KH	Y	LGT, Practical, Demonstration,	Written	
AN37.3	Describe anatomical basis of sinusitis & maxillary sinus tumours	K	KH	N	LGT	Written	
Topic 38: Larynx							
AN38.1	Describe & demonstrate the morphology, identify structure of the wall, nerve supply, blood supply and actions of intrinsic and extrinsic muscles of the larynx	K,S	SH	Y	LGT, Practical, Demonstration, Dissection	Written/ Viva voce/ skill assessment	
AN38.2	Describe the anatomical aspects of laryngitis	K	KH	N	LGT	Written	
AN38.3	Describe anatomical basis of recurrent laryngeal nerve injury	K	KH	N	LGT	Written	

Topic 39: Tongue							
AN39.1	Describe & demonstrate the morphology, nerve supply, embryological basis of nerve supply, blood supply, lymphatic drainage and actions of extrinsic and intrinsic muscles of tongue	K,S	SH	Y	LGT, Practical, Demonstration, Dissection	Written/ Viva voce/ skill assessment	
AN39.2	Explain the anatomical basis of hypoglossal nerve palsy	K	KH	N	LGT	Written	
Topic 40: Organs of hearing and equilibrium							
AN40.1	Describe & identify the parts, blood supply and nerve supply of external ear	K,S	SH	Y	LGT, Practical, Demonstration, Dissection	Written/ Viva voce/ skill assessment	
AN40.2	Describe & demonstrate the boundaries, contents, relations and functional anatomy of middle ear and auditory tube	K,S	SH	Y	LGT, Practical, Demonstration, Dissection	Written/ Viva voce/ skill assessment	
AN40.3	Describe the features of internal ear	K	KH	N	LGT	Written	
AN40.4	Explain anatomical basis of otitis externa and otitis media	K	KH	N	LGT	Written	
AN40.5	Explain anatomical basis of myringotomy	K	KH	N	LGT	Written	
Topic 41: Eyeball							
AN41.1	Describe & demonstrate parts and layers of eyeball	K,S	SH	Y	LGT, Practical, Demonstration, Dissection	Written/ Viva voce/ skill assessment	
AN41.2	Describe the anatomical aspects of cataract, glaucoma & central retinal artery occlusion	K	KH	N	LGT	Written	
AN41.3	Describe the position, nerve supply and actions of intraocular muscles	K	KH	N	LGT, Practical, Demonstration	Written	
Topic 42: Back Region							

AN42.1	Describe and demonstrate the contents of the vertebral canal	K,S	SH	Y	LGT, Practical, Demonstration, Dissection	Written/ Viva voce/ skill assessment	
AN42.2	Describe & demonstrate the boundaries and contents of Suboccipital triangle	K,S	SH	Y	LGT, Practical, Demonstration, Dissection	Written/ Viva voce/ skill assessment	
AN42.3	Describe the position, direction of fibres, relations, nerve supply, actions of semispinalis capitis and splenius capitis	K	KH	N	LGT	Written	
Topic 43: Head & neck Joints, Histology, Development, Radiography & Surface marking							
AN43.1	Describe & demonstrate the movements with muscles producing the movements of atlantooccipital joint & atlantoaxial joint	K,S	SH	Y	LGT, Practical, Demonstration, Dissection	Written/ Viva voce/ skill assessment	
AN43.2	Identify, describe and draw the microanatomy of pituitary gland, thyroid, parathyroid gland, tongue, salivary glands, tonsil, epiglottis, cornea, retina	K,S	SH	Y	LGT, Practical	Written/ skill assessment	
AN43.3	Identify, describe and draw microanatomy of olfactory epithelium, eyelid, lip, sclero-corneal junction, optic nerve, cochlea- organ of corti, pineal gland	K,S	SH	N	LGT, Practical	Written/ skill assessment	
AN43.4	Describe the development and developmental basis of congenital anomalies of face, palate, tongue, branchial apparatus, pituitary gland, thyroid gland & eye	K	KH	Y	LGT	Written/ Viva voce	
AN43.5	Demonstrate- 1) Testing of muscles of facial expression, extraocular muscles, muscles of mastication, 2) Palpation of carotid arteries, facial artery, superficial temporal artery, 3) Location of internal and external jugular veins, 4) Location of hyoid bone, thyroid cartilage and cricoid cartilage with their vertebral levels	K,S	SH	Y	Practical, Demonstration	Viva voce/ skill assessment	

AN43.6	Demonstrate surface projection of- Thyroid gland, Parotid gland and duct, Pterion, Common carotid artery, Internal jugular vein, Subclavian vein, External jugular vein, Facial artery in the face & accessory nerve	K,S	SH	N	Practical, Demonstration	Viva voce/ skill assessment	
AN43.7	Identify the anatomical structures in 1) Plain x-ray skull, 2) AP view and lateral view 3) Plain x-ray cervical spine-AP and lateral view 4) Plain x- ray of paranasal sinuses	K,S	SH	Y	Practical, Demonstration	Viva voce/ skill assessment	
AN43.8	Describe the anatomical route used for carotid angiogram and vertebral angiogram	K	KH	N	LGT	Viva voce/ skill assessment	
AN43.9	Identify anatomical structures in carotid angiogram and vertebral angiogram	K,S	SH	N	Practical, Demonstration	Viva voce/ skill assessment	
Topic 44: Anterior abdominal wall							
AN44.1	Describe & demonstrate the Planes (transpyloric, transtubercular, subcostal, lateral vertical, linea alba, linea semilunaris), regions & Quadrants of abdomen	K,S	SH	Y	LGT, Practical, Demonstration, Dissection	Written/ Viva voce/ skill assessment	
AN44.2	Describe & identify the Fascia, nerves & blood vessels of anterior abdominal wall	K,S	SH	Y	LGT, Practical, Demonstration, Dissection	Written/ Viva voce/ skill assessment	
AN44.3	Describe the formation of rectus sheath and its contents	K	KH	Y	LGT, Practical, Demonstration,	Written/ Viva voce	
AN44.4	Describe & demonstrate extent, boundaries, contents of Inguinal canal including Hesselbach's triangle.	K,S	SH	Y	LGT, Practical, Demonstration, Dissection	Written/ Viva voce/ skill assessment	
AN44.5	Explain the anatomical basis of inguinal hernia.	K	KH	Y	LGT	Written/ Viva voce	

AN44.6	Describe & demonstrate attachments of muscles of anterior abdominal wall	K,S	SH	Y	LGT, Practical, Demonstration, Dissection	Written/ Viva voce/ skill assessment	
AN44.7	Describe common abdominal incisions with example and their clinical importance	K	KH	N	LGT	Written	
Topic 45: Posterior abdominal wall							
AN45.1	Describe Thoracolumbar fascia, its different layers, their attachments and extents	K	KH	Y	LGT	Written	
AN45.2	Describe & demonstrate Lumbar plexus, its root value, formation, branches and clinical anatomy (compression/ injury to the rootlets of lumber plexus)	K,S	SH	Y	LGT, Practical, Demonstration, Dissection	Written/ Viva voce/ skill assessment	
AN45.3	Describe and demonstrate back muscles, nerve supply and action	K	KH	N	LGT	Written	
Topic 46: Male external genitalia							
AN46.1	Describe & demonstrate coverings, internal structure, side determination, blood supply, nerve supply, lymphatic drainage & descent of testis with its applied anatomy	K,S	SH	Y	Dissection, LGT, SGT, DOAP	Written/ Viva voce/ skill assessment	
AN46.2	Describe parts of Epididymis	K	KH	Y	LGT, Dissection	Written/ Viva voce	
AN46.3	Describe Penis under following headings: (parts, components, blood supply and lymphatic drainage)	K	KH	Y	LGT, Dissection	Written/ Viva voce	
AN46.4	Explain the anatomical basis of Varicocele	K	KH	N	LGT	Written	
AN46.5	Explain the anatomical basis of Phimosis & Circumcision	K	KH	N	LGT	Written	
Topic 47: Abdominal cavity							

AN47.1	Describe & demonstrate horizontal and vertical tracing of peritoneum. Also describe boundaries and recesses of Lesser & Greater sac.	K,S	SH	Y	LGT, Practical, Demonstration, Dissection	Written/ Viva voce/ skill assessment	
AN47.2	Name & identify various peritoneal folds & pouches with its explanation	K,S	SH	Y	LGT, Practical, Demonstration, Dissection	Written/ Viva voce/ skill assessment	
AN47.3	Explain anatomical basis of Ascites & Peritonitis	K	KH	N	LGT	Written	
AN47.4	Explain anatomical basis of Subphrenic abscess	K	KH	N	LGT	Written	
AN47.5	Describe & demonstrate major viscera of abdomen under following headings (anatomical position, external and internal features, important peritoneal and other relations, blood supply, nerve supply, lymphatic drainage and applied aspects)	K,S	SH	Y	Dissection, LGT, SGT, DOAP	Written/ Viva voce/ skill assessment	
AN47.6	Explain the anatomical basis of Splenic notch, Accessory spleens, Kehr's sign, Different types of vagotomy, Liver biopsy (site of needle puncture), Referred pain in cholecystitis, Obstructive jaundice, Referred pain around umbilicus, Radiating pain of kidney to groin & Lymphatic spread in carcinoma stomach	K	KH	N	LGT	Written	
AN47.7	Demonstrate boundaries of Calot's triangle and mention its clinical importance	K	KH	N	LGT	Written	
AN47.8	Describe & identify the formation, course relations and tributaries of Portal vein, Inferior vena cava & Renal vein	K,S	SH	Y	LGT, Practical, Demonstration, Dissection	Written/ Viva voce/ skill assessment	
AN47.9	Describe & identify the origin, course, important relations and branches of Abdominal aorta, Coeliac trunk, Superior mesenteric, Inferior mesenteric & Common iliac artery	K,S	SH	Y	LGT, Practical, Demonstration, Dissection	Written/ Viva voce/ skill assessment	
AN47.10	Describe sites of portosystemic anastomosis, describe its applied anatomy and anatomical correlations	K	KH	Y	LGT	Written	
AN47.11	Explain the anatomic basis of hematemesis& caput medusae in portal hypertension	K	KH	Y	LGT,	Written/ Viva voce	

	AN47.12	Describe important nerve plexuses of posterior abdominal wall	K	KH	N	LGT	Written	
	AN47.13	Describe & demonstrate the attachments, openings, nerve supply & action of the thoracoabdominal diaphragm	K,S	SH	Y	Dissection, LGT, SGT, DOAP	Written/ Viva voce/ skill assessment	
	AN47.14	Describe the abnormal openings of thoracoabdominal diaphragm and diaphragmatic hernia	K	KH	N	LGT	Written	
	Topic 48: Pelvic wall and viscera							
previous conpetency 48.2	AN48.1	Describe & demonstrate the position, features, important peritoneal and other relations, blood supply, nerve supply, lymphatic drainage and clinical aspects of important male & female pelvic viscera.	K,S	SH	Y	Dissection, LGT, SGT, DOAP	Written/ Viva voce/ skill assessment	
previous conpetency 48.1	AN48.2	Describe & identify the muscles of Pelvic diaphragm.	K,S	SH	Y	Dissection, LGT, SGT, DOAP	Written/ Viva voce/ skill assessment	
	AN48.3	Describe & demonstrate the origin, course, important relations and branches of internal iliac artery	K,S	SH	Y	Dissection, LGT, SGT, DOAP	Written/ Viva voce/ skill assessment	
	AN48.4	Describe the branches of sacral plexus	K	KH	Y	LGT	Written	
	AN48.5	Explain the anatomical basis of suprapubic cystostomy, Urinary obstruction in benign prostatic hypertrophy, Retroverted uterus, Prolapse uterus, Internal and external haemorrhoids, Anal fistula, Vasectomy, Tubal pregnancy & Tubal ligation	K	KH	N	LGT	Written	
	AN48.6	Describe the neurological basis of Automatic bladder	K	KH	Y	LGT	Written	
	AN48.7	Mention the lobes involved in benign prostatic hypertrophy & prostatic cancer	K	KH	N	LGT	Written	
	AN48.8	Mention the structures palpable during vaginal & rectal examination	K	KH	N	LGT	Written	
	Topic 49: Perineum							

AN49.1	Describe & demonstrate the superficial & deep perineal pouch (boundaries and contents)	K,S	SH	Y	Dissection, LGT, SGT, DOAP	Written/ Viva voce/ skill	
AN49.2	Describe & identify Perineal body	K,S	SH	Y	Dissection, LGT, SGT, DOAP	Written/ Viva voce/ skill assessment	
AN49.3	Describe & demonstrate Perineal membrane in male & female	K,S	SH	Y	Dissection, LGT, SGT, DOAP	Written/ Viva voce/ skill assessment	
AN49.4	Describe & demonstrate boundaries, content & applied anatomy of Ischiorectal fossa	K,S	SH	Y	Dissection, LGT, SGT, DOAP	Written/ Viva voce/ skill assessment	
AN49.5	Explain the anatomical basis of Perineal tear, Episiotomy, Perianal abscess and Anal fissure	K	KH	N	LGT	Written	
Topic 50: Vertebral column							
AN50.1	Describe the curvatures of the vertebral column	K	KH	Y	LGT	Written/ Viva voce	
AN50.2	Describe & demonstrate the type, articular ends, ligaments and movements of Intervertebral joints, Sacroiliac joints & Pubic symphysis	K,S	SH	Y	Dissection, LGT, SGT, DOAP	Written/ Viva voce/ skill assessment	
AN50.3	Describe lumbar puncture (site, direction of the needle, structures pierced during the lumbar puncture)	K	KH	Y	LGT	Written/ Viva voce	
AN50.4	Explain the anatomical basis of Scoliosis, Lordosis, Prolapsed disc, Spondylolisthesis & Spina bifida	K	KH	N	LGT	Written	
Topic 51: Sectional Anatomy							

AN51.1	Describe & identify the cross-section at the level of T8, T10 and L1 (transpyloric plane)	K,S	SH	Y	Dissection, LGT, SGT, DOAP	Written/ Viva voce/ skill assessment	
AN51.2	Describe & identify the midsagittal section of male and female pelvis	K	SH	Y	Dissection, LGT, SGT, DOAP	Written/ Viva voce/ skill assessment	
Topic 52: Histology & Embryology							
AN52.1	Describe & identify the microanatomical features of Gastro-intestinal system: Oesophagus, Fundus of stomach, Pylorus of stomach, Duodenum, Jejunum, Ileum, Large intestine, Appendix, Liver, Gall bladder, Pancreas & Suprarenal gland	K,S	SH	Y	LGT, Demonstration, Practical	Written/ skill assessment	
AN52.2	Describe & identify the microanatomical features of: Urinary system: Kidney, Ureter & Urinary bladder Male Reproductive System: Testis, Epididymis, Vas deferens, Prostate & penis Female reproductive system: Ovary, Uterus, Uterine tube, Cervix, Placenta & Umbilical cord	K,S	SH	Y	LGT, Demonstration, Practical	Written/ skill assessment	
AN52.3	Describe & identify the microanatomical features of Cardiooesophageal junction, Corpus luteum	K,S	SH	N	LGT, Demonstration, Practical	Written/ skill assessment	
AN52.4	Describe the development of anterior abdominal wall	K	KH	N	LGT	Written/ Viva voce	
AN52.5	Describe the development and congenital anomalies of Diaphragm	K	KH	Y	LGT	Written/ Viva voce	
AN52.6	Describe the development and congenital anomalies of: Foregut, Midgut & Hindgut	K	KH	Y	LGT	Written/ Viva voce	
AN52.7	Describe the development of Urinary system	K	KH	Y	LGT	Written/ Viva voce	
AN52.8	Describe the development of male & female reproductive system	K	KH	Y	LGT	Written/ Viva voce	
Topic 53: Osteology							

	AN53.1	Identify & hold the bone in the anatomical position, Describe the salient features, articulations & demonstrate the attachments of muscle groups	K,S	SH	Y	LGT, Demonstration, Practical	Viva voce/ skill assessment	
	AN53.2	Demonstrate the anatomical position of bony pelvis & show boundaries of pelvic inlet, pelvic cavity, pelvic outlet	K,S	SH	Y	LGT, DOAP	Viva voce/ skill assessment	
	AN53.3	Define true pelvis and false pelvis and demonstrate sex determination in male & female bony pelvis	K,S	SH	Y	LGT, DOAP	Viva voce/ skill assessment	
	AN53.4	Explain and demonstrate clinical importance of bones of abdominopelvic region (sacralization of lumbar vertebra, Lumbarization of 1st sacral vertebra, types of bony pelvis & Coccyx)	K,S	SH	N	LGT, DOAP	Viva voce/ skill assessment	
	Topic 54: Radiodiagnosis							
added new	AN54.1	Describe the principles of Plain and contrast radiography, Computed Describe the principles of Plain and contrast radiography, Computed Tomography scan and Digital subtraction angiography	K	KH	Y	LGT	Viva voce/ skill assessment	
	AN54.2	Describe & identify features of plain X ray abdomen	K,S	SH	Y	LGT, DOAP	Viva voce/ skill assessment	
added new	AN54.3	Describe & identify the special radiographs of abdominopelvic region (contrast X ray Barium swallow, Barium meal, Barium enema, Cholecystography, Intravenous pyelography & Hysterosalpingography)	K,S	SH	Y	LGT, DOAP	Viva voce/ skill assessment	
	AN54.4	Describe role of ERCP, CT abdomen, MRI, Arteriography in radiodiagnosis of abdomen	K	KH	N	LGT	Viva voce	
	Topic 55: Surface marking							

AN55.1	Demonstrate the surface marking of Regions and planes of abdomen, Superficial inguinal ring, Deep inguinal ring , McBurney's point, Renal Angle & murphy's point	K,S	SH	Y	Dissection, LGT, SGT, DOAP	Viva voce/ skill assessment	
AN55.2	Demonstrate the surface projections of: Stomach, Liver, Fundus of gall bladder, Spleen, Duodenum, Pancreas, Ileocaecal junction, Kidneys & Root of mesentery	K,S	SH	Y	Dissection, LGT, SGT, DOAP	Viva voce/ skill assessment	
Topic 56: Meninges & CSF							
AN56.1	Describe & identify various layers of meninges with its extent & modifications	K,S	SH	Y	LGT, Practical, Demonstration, Dissection	Written/ Viva voce/ skill assessment	
AN56.2	Describe formation, circulation and absorption of CSF with its applied anatomy.	K	KH	Y	LGT	Written/ Viva voce	
Topic 57 : Spinal Cord							
AN57.1	Identify external features of spinal cord	K,S	SH	Y	Practical, Demonstration	Written/ Viva voce/ skill assessment	
AN57.2	Describe extent of spinal cord in child & adult with its clinical implication	K	KH	Y	LGT, Demonstration	Written/ Viva voce	
AN57.3	Draw & label transverse section of spinal cord at mid-cervical & midthoracic level	K	KH	Y	LGT	Written/ Viva voce	
AN57.4	Enumerate ascending & descending tracts at mid thoracic level of spinal cord	K	KH	Y	LGT	Written/ Viva voce	
AN57.5	Describe the anatomical basis of clinical conditions affecting the grey and white matter of spinal cord (Brown-Sequard Syndrome, Poliomyelitis, Amyotrophic lateral sclerosis or motor neuron disease, Syringomyelia, Hereditary sensory neuropathy, Subacute Combined degeneration, Transverse myelitis, paraplegia)	K	KH	Y	LGT	Written/ Viva voce	

added new

Topic 58 : Medulla Oblongata							
AN58.1	Identify external features of medulla oblongata	K,S	SH	Y	Practical, Demonstration	Written/ Viva voce/ skill assessment	
AN58.2	Describe transverse section of medulla oblongata at the level of 1) pyramidal decussation, 2) sensory decussation 3) Inferior Olivary Nucleus	K	KH	Y	LGT	Written/ Viva voce	
AN58.3	Describe cranial nerve nuclei in medulla oblongata with their functional group	K	KH	Y	LGT	Written/ Viva voce	
AN58.4	Describe the anatomical basis of clinical conditions affecting the medulla oblongata (Medial and lateral medullary syndromes, Crossed Diplegia)	K	KH	Y	LGT	Written/ Viva voce	
Topic 59: Pons							
AN59.1	Identify external features of pons	K,S	SH	Y	Practical, Demonstration	Written/ Viva voce/ skill assessment	
AN59.2	Draw & label transverse section of pons at the upper and lower level	K	KH	Y	LGT	Written/ Viva voce	
AN59.3	Describe cranial nerve nuclei in pons with their functional group	K	KH	Y	LGT	Written/ Viva voce	
AN59.4	Describe the anatomical basis of clinical conditions affecting the pons (Locked-in syndrome, Pontine haemorrhage, Foville syndrome, Raymond syndrome, Millard-Gubler syndrome)	K	KH	Y	LGT	Written/ Viva voce	
Topic 60: Cerebellum							
AN60.1	Describe & demonstrate external & internal features of cerebellum	K,S	SH	Y	Practical, Demonstration	Written/ Viva voce/ skill assessment	

AN60.2	Describe connections of cerebellar cortex and intracerebellar nuclei	K	KH	Y	LGT	Written/ Viva voce	
AN60.3	Describe anatomical basis of cerebellar dysfunction	K	KH	N	LGT	Written	
Topic 61: Midbrain							
AN61.1	Identify external & internal features of midbrain	K,S	SH	Y	Practical, Demonstration	Written/ Viva voce/ skill assessment	
AN61.2	Describe internal features of midbrain at the level of superior & inferior colliculus	K	KH	Y	LGT	Written/ Viva voce	
AN61.3	Describe the anatomical basis of clinical conditions affecting the midbrain (Weber syndrome, Benedikt syndrome, Parinaud syndrome)	K	KH	Y	LGT	Written/ Viva voce	
Topic 62: Cranial nerve nuclei & Cerebral hemispheres							
AN62.1	Describe the cranial nerve nuclei with its functional components	K	KH	Y	LGT	Written/ Viva voce	
AN62.2	Describe & demonstrate surfaces, sulci, gyri, poles, & functional areas of cerebral hemisphere. Also describe the effects of damage to various functional areas of cerebral cortex	K,S	SH	Y	LGT, Practical, Demonstration	Written/ Viva voce/ skill assessment	
AN62.3	Describe the white matter of cerebrum. Also describe the effects of damage to corpus callosum and different parts of internal capsule	K	KH	Y	LGT	Written/ Viva voce	
AN62.4	Describe the parts & major connections of basal ganglia & limbic lobe. Also explain the anatomical basis of Parkinson's disease, chorea, athetosis and ballismus	K	KH	Y	LGT	Written/ Viva voce	

AN62.5	Describe boundaries, parts, gross relations, major nuclei and connections of dorsal thalamus, hypothalamus, epithalamus, metathalamus and subthalamus	K	KH	Y	LGT	Written/ Viva voce	
AN62.6	Describe & identify formation, branches & major areas of distribution of circle of Willis	K/S	SH	Y	LGT, Practical, Demonstration	Written/ Viva voce/ skill assessment	
Topic 63: Ventricular System & Special sensory pathways							
AN 63.1	Describe & demonstrate parts, boundaries and features of 3rd, 4th and lateral ventricle	K,S	SH	Y	LGT, Practical, Demonstration	Written/ Viva voce/ skill assessment	
AN63.2	Describe anatomical basis of congenital hydrocephalus	K	KH	N	LGT	Written	
AN63.3	Describe the olfactory, visual, auditory and gustatory pathways	K	KH	Y	LGT	Written/ Viva voce	
Topic 64: Histology & Embryology							
AN64.1	Describe & identify the microanatomical features of Spinal cord, Cerebellum & Cerebrum	K,S	SH	Y	LGT, Practical	Written/ skill assessment	
AN64.2	Describe the development of neural tube, spinal cord, medulla oblongata, pons, midbrain, cerebral hemisphere & cerebellum	K	KH	Y	LGT	Written/ Viva voce	
AN64.3	Describe various types of open neural tube defects with its embryological basis	K	KH	N	LGT	Written/ Viva voce	
Topic 65: Epithelium histology							
AN65.1	Identify epithelium under the microscope & describe the various types that correlate to its function	K,S	SH	Y	LGT, Practical	Written/ skill assessment	
AN65.2	Describe the ultrastructure of epithelium	K	KH	N	LGT, Practical	Written	
Topic 66: Connective tissue histology							

AN66.1	Describe & identify various types of connective tissue with functional correlation	K,S	SH	Y	LGT, Practical	Written/ skill assessment	
AN66.2	Describe the ultrastructure of connective tissue	K	KH	N	LGT, Practical	Written	
Topic 67: Muscle histology							
AN67.1	Describe & identify various types of muscle under the microscope	K,S	SH	Y	LGT, Practical	Written/ skill assessment	
AN67.2	Classify muscle and describe the structure-function correlation of the same	K	KH	Y	LGT	Written	
AN67.3	Describe the ultrastructure of muscular tissue	K	KH	N	LGT	Written	
Topic 68: Nervous tissue histology							
AN68.1	Describe & Identify multipolar & unipolar neuron, ganglia, peripheral nerve under the microscope	K/S	SH	Y	LGT, Practical	Written/ skill assessment	
AN68.2	Describe the structure-function correlation of neuron	K	KH	Y	LGT	Written	
AN68.3	Describe the ultrastructure of nervous tissue	K	KH	N	LGT	Written	
Topic 69: Blood Vessels							
AN69.1	Identify elastic & muscular blood vessels, capillaries under the microscope	K,S	SH	Y	LGT, Practical	Skill assessment	
AN69.2	Describe the various types and structure-function correlation of blood vessel	K	KH	Y	LGT	Written	
AN69.3	Describe the ultrastructure of blood vessels	K	KH	Y	LGT	Written	
Topic 70: Glands & Lymphoid tissue							

Practical removed

Practical removed

AN70.1	Identify exocrine gland under the microscope & distinguish between serous, mucous and mixed acini	K,S	SH	Y	LGT, Practical	Written/ skill assessment	
AN70.2	Identify the lymphoid tissue under the microscope & describe microanatomy of lymph node, spleen, thymus, tonsil and correlate the structure with function	K,S	SH	Y	LGT, Practical	Written/ skill assessment	
Topic: Bone & Cartilage –							
AN71.1	Identify bone under the microscope; classify various types and describe the structure-function correlation of the same	K,S	SH	Y	LGT, Practical	Written/ skill assessment	
AN71.2	Identify cartilage under the microscope & describe various types and structure- function correlation of the same	K,S	SH	Y	LGT, Practical	Written/ skill assessment	
Topic 72: Integumentary System							
AN72.1	Identify the skin and its appendages under the microscope and correlate the structure with function	K,S	SH	Y	LGT, Practical	Written/ skill assessment	
Topic: 73 Chromosomes							
AN73.1	Describe the structure of chromosomes with classification	K	KH	Y	LGT, Practical	Written	
AN73.2	Describe technique of karyotyping with its applications	K	KH	Y	LGT, Practical	Written	
AN73.3	Describe the Lyon's hypothesis	K	KH	Y	LGT, Practical	Written	
Topic 74: Patterns of Inheritance							
AN74.1	Describe mendelian and non-mendelian inheritance. Explain various modes of inheritance with examples.	K	KH	Y	LGT, Practical	Written	
AN74.2	Draw pedigree charts for the various types of inheritance & give examples of diseases of each mode of inheritance	K	KH	Y	LGT, Practical	Written	

	AN74.3	Describe multifactorial inheritance with examples	K	KH	Y	LGT, Practical	Written	
	AN74.4	Describe the genetic basis & clinical features of Achondroplasia, Cystic Fibrosis, Vitamin D resistant	K	KH	N	LGT, Practical	Written	
	Topic 75: Principles of Genetics, Chromosomal Aberrations & Clinical Genetics							
	AN75.1	Describe the structural and numerical chromosomal aberrations	K	KH	Y	LGT, Practical	Written	
	AN75.2	Explain the terms mosaics and chimeras with example	K	KH	N	LGT	Written	
	AN75.3	Describe the genetic basis & clinical features of: Prader Willi syndrome, Edward syndrome, Patau syndrome, Down syndrome, Turner Syndrome & Klinefelter syndrome	K	KH	N	LGT	Written	
Removed clinical features of Achondroplasia, cystic fibrosis, vitamin D resistent ricket's Haemophilia, Duchene's muscular dystrophy & sickle cell anemia	AN75.4	Describe genetic basis of variation: polymorphism and mutation	K	KH	Y	LGT	Written	
	AN75.5	Describe in brief: genetic counseling, karyotyping, FISH, PCR and genetic sequencing	K	KH	Y	LGT	Written	
	Topic 76: Introduction to embryology							
	AN76.1	Describe the stages of human life	K	KH	Y	LGT	Written	
	AN76.2	Explain the terms- phylogeny, ontogeny, trimester, viability	K	KH	Y	LGT	written	

removed
enumerate

Topic 77: Gametogenesis and fertilization							
AN77.1	Describe the uterine changes occurring during the menstrual cycle	K	KH	Y	LGT	Written	
AN77.2	Describe the synchrony between the ovarian and menstrual cycles	K	KH	Y	LGT	Written	
AN77.3	Describe spermatogenesis and oogenesis along with diagrams	K	KH	Y	LGT	Written	
AN77.4	Describe the stages and consequences of fertilisation	K	KH	Y	LGT	Written	
AN77.5	Describe the anatomical principles underlying contraception	K	KH	Y	LGT	Written	
AN77.6	Describe teratogenic influences: fertility and sterility, surrogate motherhood,social significance of "sex-ratio"	K	KH	N	LGT	Written	
AN78.3	Describe the process of implantation & common abnormal sites of implantation	K	KH	Y	LGT	Written	
AN78.4	Describe the formation of extra-embryonic mesoderm and coelom, bilaminar disc and prochordal plate	K	KH	Y	LGT	Written	
AN78.5	Describe abortion, decidual reaction, pregnancy test	K	KH	Y	LGT	Written	
Topic 79: 3rd to 8th week of development							
AN79.1	Describe the formation & fate of the primitive streak	K	KH	Y	LGT	Written	
AN79.2	Describe formation & fate of notochord	K	KH	Y	LGT	Written	
AN79.3	Describe the process of neurulation	K	KH	Y	LGT	Written	
AN79.4	Describe the development of somites and intra-embryonic coelom	K	KH	Y	LGT	Written	
AN79.5	Explain embryological basis of congenital malformations, nucleus pulposus, sacrococcygeal teratomas, neural tube defects	K	KH	N	LGT	Written	
AN79.6	Describe the diagnosis of pregnancy in first trimester and role of teratogens, alpha-fetoprotein	K	KH	N	LGT	Written	

	Topic 80: Fetal membranes Number of Competencies (7) Number of competencies for certification: (NIL)							
	AN80.1	Describe formation, functions & fate of chorion, amnion, yolk sac, allantois & decidua	K	KH	Y	LGT	Written	
	AN80.2	Describe formation & structure of umbilical cord	K	KH	Y	LGT	Written	
	AN80.3	Describe formation of placenta, its physiological functions, foetomaternal circulation & placental barrier	K	KH	Y	LGT	Written	
	AN80.4	Describe embryological basis of twinning in monozygotic & dizygotic twins	K	KH	Y	LGT	Written	
	AN80.5	Describe role of placental hormones in uterine growth & parturition	K	KH	Y	LGT	Written	
	AN80.6	Explain embryological basis of estimation of fetal age.	K	KH	N	LGT	Written	
	AN80.7	Describe various types of umbilical cord attachments	K	KH	N	LGT	Written	
	Topic 81: Prenatal Diagnosis							
added invasive and non invasive methods	AN81.1	Describe various invasive & non-invasive methods of prenatal diagnosis	K	KH	Y	LGT	Written	
	AN81.2	Describe indications, process and disadvantages of amniocentesis	K	KH	Y	LGT	Written	
	AN81.3	Describe indications, process and disadvantages of chorion villus biopsy	K	KH	Y	LGT	Written	
	Topic 82: Ethics in Anatomy							
	AN 82.1	Demonstrate respect, and follow the correct procedure when handling cadavers and other biologic tissue	A	SH	Y	SGT	NIL	

*** Resolution No. 4.1 of AC-41/2021 : Resolved to continue the same AETCOM questions and their distribution for Anotomy, Physiology & Biochemistry as per syllabus in 2019-20, for subsequent batches**

SR. NO.	SUBTOPIC		COMPETENCY NUMBER
	NAME	DESCRIPTION	
	*** XIV AETCOM**		
	CORE/ Y		
1	Write dos and don'ts of doctor-patient verbal communication.		
2	Boundaries of the doctor-patient relationship		
3	"Cadaver as our first teacher" Justify		
4	Write a note on importance handling of biological tissues.		
5	Need for biomedical waste management		
6	Enumerate drum/bag colors used with the types of biomedical waste to be disposed in them.		
7	Write note on things you will do & not do in dissection hall to show your respect for cadaver.		
8.	Enumerate different locations in medical colleges and hospitals where biomedical waste disposal		

Resolution No. 5.8 of Academic Council (AC-48/2023):

Resolved to approve the final internal assessment pattern of theory and practical **[ANNEXURE-12A & 12B],** SOP for conduction of continuous internal assessment pattern of theory and practical including Attendance marks distribution tabular format for Anatomy, Physiology and Biochemistry **[ANNEXURE-13],** updated blueprint of question papers of Anatomy, Physiology and Biochemistry **[ANNEXURE-14A, 14B & 14C],** AETCOM competency redistribution table with short notes **[ANNEXURE-15]** which are prepared in alignment with changes mentioned in CBME guidelines published on 01.08.2023.

Annexure 15

Redistribution of AETCOM questions in Anatomy, Physiology and Biochemistry
(As per redistribution of AETCOM modules. Ref: NMC letter No. U. 1 4021 1812023-UGMEB dated 01.08.23)

	Proposed change
Anatomy	**Module 1.5 & 1.1** 1.Physician role and responsibility to society and community that he serves 2. Duties of doctor 3 "Cadaver as our first teacher" Justify 4 Write a note on importance handling of biological tissues. 5 Need for biomedical waste management 6 Enumerate drum/bag colors used with the types of biomedical waste to be disposed in them. 7 Write note on things you will do & not do in dissection hall to show your respect for cadaver. 8. Enumerate different locations in medical colleges and hospitals where biomedical waste disposal

Resolution No. 4.5 of Academic Council (AC-50/2024): Resolved to approve & adopt AETCOM competencies (modules) distribution subject-wise in the Anatomy, Physiology & Biochemistry and also distribution of modules in theory paper I & II from **First MBBS 2024-25 batch onwards.**

AETCOM Competencies Distribution for Anatomy, Physiology and Biochemistry from First MBBS 24-25 batch onwards

(Ref: NMC letter No. D-11011/500/2024-AcademicCell (e-8284443)
UGMEB Dated 12/09/2024)

Subject	Paper	Module Number	Competency
Anatomy	**Paper I**	Module 1.5	• The cadaver as our first teacher Demonstrate respect and follow the correct procedure when handling cadavers and other biologic tissue
	Paper II	Module 1.4	• Demonstrate ability to communicate to patients in a patient, respectful, nonthreatening, non-judgmental and empathetic manner
Physiology	**Paper I**	Module 1.2,	• Enumerate and describe professional qualities and roles of a physician
	Paper II	Module 1.3	• Demonstrate empathy in patient encounters
Biochemistry	**Paper I**	Module 1.1,	• Enumerate and describe professional qualities and roles of a physician • Describe and discuss commitment to lifelong learning as an important part of physician growth
	Paper II	Module 1.1	• Describe and discuss the role of a physician in health care system • Identify and discuss physician's role and responsibility to society and the community that she/ he serves

Assessment:
All internal and University exams must have one question/application based question On AETCOM in each theory paper (5%) and it should be assessed in various components of Practical/clinical exams.

LECTURE TOPICS – 2019-20

Sr. No.	Unit Name	Competency No.	Topic
1	General Anatomy (11 hours)	AN1.1	Introduction
2		AN1.1	Terminology
3		AN4.1,2,3,4	Skin & Fascia
4		AN2.1, 2.3	Bone
5		AN2.2	Ossification of Bone
6		AN2.5, 6	Joint – I
7		AN2.5, 6	Joint – II
8		AN3.1, 2, 3 AN7.5,6	Muscular System
9		AN5.1,2,3,6,7,8 6.1,2,3	CVS & Lymphatic system
10		AN7.1,2,3,7	Nervous system
11			Imaging techniques
12	Upper Limb (17 hours)	AN9.2	Mammary Gland
13		AN10.8	back muscles
14		AN10.1,4,7	Axilla with axillary lymph nodes
15		AN10.3,5,6	Brachial Plexus
16		AN10.2,13	Axillary vessels & Nerve
17		AN13.4	Pectoral Girdle
18		AN10.10,12	Shoulder joint
19		AN11.1,2,3,5	Compartments of arm and cubital fossa
20		AN13.3	Elbow Joint
21		AN10.9, 11.6	Arterial anastomoses & venous drainage of upper limb

22	Upper Limb	AN13.3	Radio-Ulnar Joint
23		AN12.9,10	Spaces of Hand
24		AN12.7	Blood supply & nerve supply of palm
25		AN12.6 13.3	Wrist Jt. & 1st CPM Jt.
26		AN12.2,8,12	Median & ulnar nerve
27		AN11.4, 12.2,12,13	Radial Nerve
28		AN13.1,2	Cutaneous nerve supply of upper limb & dermatomes of upper limb
29	Lower Limb (12 hours)	AN20.3,5	Venous drainage of lower limb
30		AN15.3,4	Femoral triangle
31		AN15.5	Adductor canal & obturator nerve
32		AN16.1,2,	Gluteal region
33		AN16.4,5	Back of thigh and sciatic nerve
34		AN17.1,2,3	Hip joint
35		AN16.6	Popliteal fossa
36		AN18.4, 5,6,7	Knee joint
37		AN18.1,2,3, AN19.1,2,3	Compartments of Leg
38		AN20.1	Ankle joint
39		AN20.2	Inversion & Eversion and subtalar joint
40		AN19. 5,6	Arches of foot
41	HFN (39 hours)	AN27.1,2	Scalp
42		AN28.1	Face 1-Muscles of
43		AN28.2,3,4,8	Face 2-Nerve supply & Blood Supply of face with clinical

44	HFN	AN35.1,10	Deep Cervical Fascia
45		AN29.1a, 3,4	Post. triangle of Neck
46		AN42.2,3	Sub-Occipital Triangle with semispinalis capitis and splenius capitis
47		AN32.1,2	Division of Ant. Triangle & carotid triangle
48		AN35.2,8	Thyroid gland
49		AN62.1	Functional component of Cr. Nr. Nuclei
50		AN35.6,7	Cervical sympathetic chain & 11th Cr. Nr.
51		AN28.9,10	Parotid gland
52		AN28.6,7	Facial nerve
53		AN33.1	Infratemporal fossa & Mandibular nerve
54		AN33.3,2,5	T M Joint & muscles of mastication
55		AN34.1,2	Submandibular region & gland
56		AN35.7	12th Cranial nerve
57		AN35.7	Styloid App. & 9th Cranial nerve
58		AN42.1, AN50.1,2,4	Vertebral column & vertebral canal with its contents
59		AN30.3,4, AN56.1	Meninges & Dural venous sinuses
60		AN30.3,4	superior sagittal and cavrnous sinus
61		AN30.5	Pituitary gland with development
62		AN31.1,2	Extra ocular muscles
63			Ophthalmic & maxillary division of 5th Cr. Nr
64		AN31.2,5	3rd cranial nerve
65		AN31.2,5	4th & 6th Cranial nerve
66			Peripheral parasympathetic ganglia

67	HFN	AN41.1,2,3	Parts and layers of eyeball (L)
68		AN43.1	Cranio vertebral joints
69		AN36.1,2,3,4,5	Pharynx & palatine tonsil
70		AN39.1,2	Tongue
71		AN36.1	Palate
72		AN37.1	Nasal Septum
73		AN37.1	Lateral wall of nose
74		AN37.2,3	Para nasal air sinus
75		AN38.1,2,3	Larynx-I
76		AN38.1,2,3	Larynx-II
77		AN40.2,4,5	Middle ear cavity
78		AN40.3	Describe the features of internal ear (L)
79		AN28.5, AN35.5	cervical lymph nodes and lymphatic drainage of HFN
80	Neuroanatomy (22 hours)	AN57.1,2	Spinal Cord external features with blood supply
81		AN57.3,4,5	Spinal Cord -I - 2 sections, nuclei, descending tracts
82		AN57.3,4,5	Spinal cord -II - tracts, applied anatomy
83		AN58.1,2,3,4	Medulla oblongata -I
84		AN58.1,2,3,4	Medulla oblongata -II
85		AN59.1,2,3	Pons
86		AN61.1,2,3	Midbrain
87		AN60.1,2,3	Cerebellum
88		AN62.5	Thalamus
89		AN62.5	Hypothalamus

90	Neuroanatomy	AN62.5	Boundaries, parts, gross relations, major nuclei and connections of epithalamus and subthalamus
91		AN62.4	Basal ganglia
92		AN62.2	Cerebrum -I
93		AN62.2	Cerebrum -II
94		AN63.1,2	Lateral Ventricles & III ventricle
95		AN56.2, AN63.1,2	4^{th} ventrical & CSF circulation
96		AN62.6	Blood supply of brain
97		AN62.3	White fibres of cerebrum with corpus callosum
98		AN62.3	Internal capsule
99		AN62.4	Limbic system
100			Autonomic nervous system
101			Revision lecture
102	Thorax (15 hours)	AN21.3,8	Thoracic cage with joints of thorax
103		AN21.4,5,6,7,10	Intercostal space
104		AN24.1	Pleura
105		AN24.1,2,3,5	Lung & Bronchopulmonary segments
106		AN21.11	Division of Mediastinum, sup.mediastinum
107		AN23.1	Oesophagus
108		AN21.11	Posterior Mediastinum + splanchnic nerves
109		AN22.1,2	Exterior of heart & Pericardium
110		AN22.2	Interior of heart
111		AN22.6,7	fibrous skeleton of heart & conducting system of heart

112	Thorax	AN22.3,4,5	Coronary circulation
113		AN23.3	Azygous veins
114		AN23.2,7	Thoracic duct + Right lymphatic duct (L)
115		AN47.13,14	Diaphragm
116		AN21.9,	movements of respiration
117	Abdomen & Pelvis (27 hours)	AN44.1,2,6	Anterior abdominal wall
118		AN44.3,7	Rectus sheath & abdominal incisions
119		AN44.4,5	Inguinal canal
120		AN46.1,2,4	Testies
121		AN47.1,2,3,4	Peritoneum I
122		AN47.1,2,3,4	Peritoneum II
123		AN47.5,6	Stomach
124		AN47.5,6	Duodenum
125		AN47.8,10,11	Portal vein & circulation
126		AN47.5,6	Extra Hepatic Billiary app.
127		AN47.5,6	Pancreas
128		AN47.5,6	Spleen
129		AN47.5,6	Caeum & Appendix
130		AN47.5,6	Kidney
131		AN45.1, AN47.12	Post. Abdominal wall with Thoracolumbar fascia ,
132		AN45.2	Lumbar & Lumbosacral plexus
133		AN47.9	Abdominal aorta & its branches
134		AN51.1	cross-section at the level of T8, T10 and L1

135	Abdomen & Pelvis	AN48.2,5,6	Urinary bladder
136		AN48.2,5,7	Prostate
137		AN48.2,5	Uterus & its support
138		AN48.2,5	Rectum
139		AN48.2,5,8	Anal canal
140		AN48.1	Pelvic floor
141		AN49.4,5	Ischiorectal fossa
142		AN49.1,2,3,5	Perineal pouches
143		AN50.2	Intervertebral joints, Sacroiliac joints & Pubic symphysis (LD)
144	General Histology (14 hours)		Cell and microscope-LD
145		AN65.1	Epithelium
146		AN65.1	Epithelium
147		AN70.1	Glands
148		AN66.1	Connective tissue
149		AN71.2	Cartilage
150		AN71.1	Bone
151		AN67.1,2	Muscle tissue
152		AN68.1,2	Nervous tissue
153		AN69.1,2,3	Blood vessels
154		AN70.2	Lymphatic tissue -I
155		AN70.2	Lymphatic tissue -II
156		AN72.1	Skin
157			Revision lecture

158	Systemic Histology (16 hours)	AN25.1, AN43.2	Respiratory system + olfactory epithelium
159		AN52.1	(salivary glands)
160		AN52.1	lip,Tongue
161		AN52.1	GIT-1 general features of GIT & oesophagus
162		AN52.1	GIT-2 (stomach +Cardioesophageal junction)
163		AN52.1	GIT-3 (Small & Large Intestine)
164		AN52.1	GIT -4 (accessory glands)
165		AN52.2	Urinary system
166		AN52.2	Male reproductive system + Penis
167		AN52.2	Female reproductive system – 1 (ovary, + Corpus luteum & Fallopian tube)
168		AN52.2	Female reproductive system – 2 (cervix, uterus)
169		AN52.2, AN9.2	Female reproductive system - 3 (Mammary gland + placenta & umbilical cord)
170		AN52.1	Endocrine + pineal gland
171		AN52.1	special senses + eyelid, sclero-corneal junction, optic nerve + cochlea- organ of corti
172		AN64.1	Central nervous system
173			Revision lecture
174	General Embryology (14 hours)		Mitosis & Meosis
175		AN77.3	Gamatogenesis
176		AN77.1, 2	Ovarian & menstrual cycles
177		AN77.4, AN78.1, 3	Fertilization, Implantation
178		AN78.4	2^{nd} week of development
179		AN79.1, 2	3^{rd} week -1 (primitive streak, gastrulation & notochord)

180	General Embryology	AN79.3	3rd week -2 (Neural tube & 3 germ layers)
181		AN79.4	4th week – folding , development of anterior abdominal wall & Embryonic period
182		AN80.3	Placenta
183		AN79.6, AN80.6	diagnosis of pregnancy in first trimester & embryological basis of estimation of fetal age.
184		AN78.5, AN77.5, AN79.6	anatomical principles underlying contraception + in brief abortion & teratogens
185		AN77.6	ertility and sterility, surrogate motherhood, social significance of “sex-ratio”.
186		AN80.4	embryological basis of twinning in monozygotic & dizygotic twins
187			Revision lecture
188	Systemic Embryology (24 hours)	AN13.8, AN9.3	Limb development with development of breast
189		AN43.4	Pharyngeal arches
190		AN43.4	Tongue and thyroid
191		AN43.4	Face and palate
192		AN43.4	development and developmental basis of congenital anomalies of eye
193		AN25.2,4,5	Cardio vascular system - 1 (Heart)
194		AN25.2,4,5	Cardio vascular system - 2 (Heart)
195		AN25.2,4,5	Cardio vascular system – 3 (Arteries)
196		AN25.2,4,5	Cardio vascular system – 3 (Veins)
197		AN25.3	Fetal & Neonatal circulation
198		AN52.5	Body cavities & diaphragm
199		AN25.1	Respiratory system
200		AN64.2,3	Describe the development of neural tube, cerebral hemisphere & cerebellum
201		AN64.2,4	Describe the development of spinal cord, medulla oblongata, pons, midbrain,

202	Systemic Embryology	AN64.2,5	Describe various types of open neural tube defects with its embryological basis
203		AN52.6	Gastro intestinal system – 1
204		AN52.6	Gastro intestinal system – 2
205		AN52.6	Gastro intestinal system – 3
206		AN52.6	Gastro intestinal system – 4
207		AN52.7	Urinary system - Kidney & Ureter
208		AN52.8	Reproductive system - 1
209		AN52.8	Reproductive system - 2
210		AN52.8	Reproductive system - 3
211			Revision lecture
212	Genetics (10 hours)		Introduction
213		AN73.1	Structure of gene & chromosome
214		AN73.2	Karyotyping
215		AN75.1	Chromosomal aberrations
216		AN74.1,2,3	Inheritence
217		AN75.5	PND &Genetic Counseling
218		AN74.3	Describe multifactorial inheritance with examples
219		AN74.4	Describe the genetic basis & clinical features of Achondroplasia, Cystic Fibrosis, Vitamin D resistant rickets, Haemophilia, Duchene's muscular dystrophy & Sickle cell anaemia
220		AN75.3	Describe the genetic basis & clinical features of Prader Willi syndrome, Edward syndrome & Patau syndrome
221		AN75.4	Describe genetic basis of variation: polymorphism and mutation
222	Bioethics (1 hour)	AN 82.1	Biomedical waste disposal

Anatomy paper wise syllabus distribution (Prelim & University)

Paper I

- Upper Limb
- Thorax
- Head, Face & Neck
- Neuroanatomy
- Related Systemic Histology
- Related Systemic Embryology
- Genetics
- AETCOM – 1 SAQ (Module – 1.2,1.3)

Paper II

- Lower Limb
- Abdomen
- Pelvis
- Related Systemic Histology
- Related Systemic Embryology
- General Anatomy
- General Histology
- General Embryology

MGMIHS
1st year MBBS. CBME
Format for Internal assessment examinations

Sr. No.	Exam	Theory	Practical
1.	Internal assessment examinations	200	100
2.	Preliminary examination	200	100
Total		**400**	**200**

- Preliminary examination pattern will be as per University examination
- Respective colleges/ departments will conduct internal assessment examinations and maintain records of the same.

***Resolution No. 4.8 of AC-41/2021:** Resolved to approve the change in the pattern of Internal Assessment calculations, to be implemented from current batch of 1st MBBS (CBME) (i.e. AY- 2020-21) onwards

Annexure-27C of AC-41-2021

MGM Medical College, Navi Mumbai & Aurangabad

1st year MBBS CBME

INTERNAL ASSESSMENT CALCULATION

Sr. No.	Criteria	Theory	Practical
1.	*All internal assessment examinations including preliminary examination	50	50
2.	Day to Day assessment		
	➢ Day to Day assessment (PBL/ TBL/ Seminar/ MCQ test etc)	30	
	➢ Day to Day assessment (Viva/ Spotters/ OSPE / OSVE etc)		30
3.	Logbooks (Foundation Course, AETCOM, Competency logbook, SDL – each 5 marks)	20	
	Journals + ECE Logbook		20
Total		**100**	**100**

FORMAT FOR INTERNAL ASSESSMENT EXAMINATIONS

Sr. No.	Exam	Theory	Practical
1.	Internal assessment examinations (Midterm + Terminal)	200 (100 + 100)	100 (50 + 50)
2.	Preliminary examination	200	100
3.	Additional examination forstudents who have missed any of 3 internal assessment exams or are not qualifying	200	100

***Internal assessment examinations marks conversion to internal assessment marks -**
Student's internal assessment examinations scores [Midterm, Terminal, Preliminary and additional (where applicable)] will be converted to 50 marks eachfor theory and practical internal assessment.

Annexure-28A of AC-41-2021

MGMIHS

I MBBS CBME

UNIVERSITY EXAMINATION PATTERN
I MBBS - HUMAN ANATOMY

Part of exam	Marks
Theory Paper I	100 Marks
Theory Paper II	100 Marks
Practical	100 Marks
Total	**300 Marks**

FORMAT FOR INTERNAL ASSESSMENT EXAMINATIONS

Sr. No.	Exam	Theory	Practical
1.	Internal assessment examinations (Midterm + Terminal)	200 (100 + 100)	100 (50 + 50)
2.	Preliminary examination	200	100
3.	Additional examination for students who have missed any of 3 internal assessment exams or are not qualifying for University exam *Marks to be computed as per the missed exam or low score exam for not qualifying students.	200	100

***Internal assessment examinations marks conversion to internal assessment marks -**

Theory – Total 400 marks will be converted to 50

Practical – Total 200 marks will be converted to 50

INTERNAL ASSESSMENT CALCULATION

Sr. No.	Criteria	Theory	Practical
1.	*All internal assessment examinations including preliminary examination	50	50
2.	Day to Day assessment		
	➢ Day to Day assessment (PBL/ TBL/ Seminar/ MCQ test etc)	30	
	➢ Day to Day assessment (Viva/ Spotters/ OSPE / OSVE etc)		30
3.	Logbooks (Foundation Course, AETCOM, Competency logbook, SDL – each 5 marks)	20	
	Journals + ECE Logbook		20
Total		**100**	**100**

Resolution No. 4.7 of Academic Council (AC-50/2024): Resolved to approve the structured format of internal assessment for all the subjects of first **MBBS 2024-25 onwards**. **[ANNEXURE-27]**

Internal Assessment Pattern for Theory and Practical

Phase -1 MBBS- (2024-25 CBME)

FORMAT FOR INTERNAL ASSESSMENT EXAMINATION IN ANATOMY, PHYSIOLOGY, BIOCHEMISTRY

Sr. No.	Exam	Theory	Practical
1.	Internal assessment examinations	200	200
2.	Preliminary examination	200	100
Total		**400**	**300**

- Preliminary examination pattern will be as per University examination
- Respective colleges/ departments will conduct internal assessment examinations and maintain records of the same.

Sr. No.	Exam	Theory	Practical
1.	Internal assessment examinations (Midterm + Terminal)	200 (100 + 100)	200 (100 + 100)
2.	Preliminary examination	200	100
3.	• Additional examination for students missing any of the three Internal Assessment exams / not qualifying for University Exam. • Marks to be computed as per the missed Exam / low score exam for non-qualifying students.	200/100	100

***Internal assessment examinations marks conversion to internal assessment marks -** Student's internal assessment examinations scores [Midterm, Terminal, Preliminary and additional (where applicable)] will be converted to 50 marks for theory and 50 marks for Practical internal assessment.

INTERNAL ASSESSMENT CALCULATION (THEORY)

Sr. No.	Criteria	Theory
1.	*All internal assessment examinations including preliminary examination	**50**
2.	**Day to Day assessment**	
	Continuous class test (Minimum two – one in each term of 30 marks) (MCQ /SAQ/LAQ/BAQ/Home assignment etc.)	**30**
3.	Self-Directed Learning (SDL) (Seminar/ Case presentation/ PBL/ TBL)	**15**
4	Attendance	**05**
Total		**100**

INTERNAL ASSESSMENT CALCULATION (PRACTICAL)

Sr. No.	Criteria	Practical
1.	*All internal assessment examinations including preliminary examination	**50**
2.	**Certifiable competencies assessment** **(**Viva/ Spotters/ OSPE**) & logbook** (Minimum two – one in each term of 25 marks)	**25**
3.	AETCOM	**10**
4.	Journals +ECE	**10**
5	Attendance	**05**
Total		**100**

Mark Distribution for Attendance for Theory and Practical

Attendance in Percentage	Marks (Out of 5)
75 -80 %	2.5 -3
81- 85 %	3.1- 3.5
86 – 90 %	3.6- 4.0
91 – 95 %	4.1-4.5
96 – 100 %	4.6-5.0

In spite of all (Attendance of theory + practical, IA and Certifiable competency) measures, if student is still not meeting the criteria to be eligible for regular exam he shall be detained and offered remedial for same batch supplementary exam. For attendance, he will be allowed remedial measures only if attendance is more than 60% for each component.

Resolution No. 4.9 of Academic Council (AC-50/2024): Resolved to approve the criteria of attendance in the pattern of eligibility to appear for professional examinations from **First MBBS 2024-25 batch** as per new CBME guidelines published on 12/09/2024.
[ANNEXURE-29]

The criteria of attendance of students for eligibility to university examination.

(Government of India National Medical Commission Letter no D-11011/500/2024-Academic Cell e- 8284443- UGMEB Dated 12/09/2024 page 39,40 and 42, 43)

I. Eligibility to appear for Professional examinations

The performance in essential components of training are to be assessed, based on
Following three components:

Attendance

Internal Assessment

Certifiable Competencies Achieved:

(a) Attendance

There shall be a minimum of 75% attendance in theory and 80% attendance in practical /clinical for eligibility to appear for the examinations in that subject. In subjects that are taught in more than one phase - the learner must have 75% attendance in theory and 80% attendance in practical in each phase of instruction in that subject. There shall be a minimum of 75% attendance in AETCOM and minimum of 80% attendance in family visits under Family adoption 40 programme. Each student shall adopt minimum 3 families/ households and preferably five families. The details shall be as per Family Adoption Program guidelines.

o If an examination comprises more than one subject (for e.g., General Surgery and allied branches), the candidate must have a minimum of 75% attendance in each subject including its allied branches, and 80% attendance in each clinical posting. Learners who do not have at least 75% attendance in the electives will not be eligible for the Third Professional - Part II examination/ NExT.

Remedial measures:

A student whose has deficiency(s) in any of the 3 criteria that are required to be eligible to appear in university examination, should be put into remedial process as below:

During the course: If Internal assessment (IA) or attendance is less or/and certifiable competencies not achieved and marked in log book in quarterly/ six monthly monitoring, the students/parents must be intimated about the possibility of being detained much before the final university examination, so that there is sufficient time for remedial measures. These students should be provided remedial measures as and when needed to improve IA. Any certifiable competency/ IA marks deficiency should be attended with planned teaching/tests for them. Student should complete the remedial measures and it should be documented.

In spite of all above measures, if student is still not meeting the criteria to be eligible for regular exam he shall be offered remedial for the same batch supplementary exam. For attendance, he will be allowed remedial measures ONLY IF attendance is more than 60% for each component. At the end of phase: If Internal assessment (IA) or attendance is less or/and certifiable competencies not achieved and marked in log book at the end of regular classes in a phase, the student is detained to appear in regular university examination of that batch.

BLUEPRINT OF UNIVERSITY QUESTION PAPER

1.THEORY EXAMINATION PATTERN

1. 1. Theory Question Paper Pattern:

Two papers each of 3 hours duration and carrying 100 marks each.

1.2. Marks distribution for each paper:

Type of question	Numbers X Marks	Total marks
Multiple Choice Questions	20 X 1	20
Long Answer Questions (LAQ)	2 X 10	20
Short Answer Questions (SAQ)	6 X 5	30
Brief Answer Questions (BAQ)	10 X 3	30
Total		**100**

Each Paper is divided into 3 sections:
Section A: MCQ 20 marks
Section B: 40 marks: BAQ 5/6 x 3= 15; SAQ 3/4 x 5= 15; LAQ 1/2 x 10 = 10
Section C: 40 marks: BAQ 5/6 x 3= 15; SAQ 3/4 x 5= 15; LAQ 1/2 x 10 = 10

1.3. Paper I & Paper II Contents

1.3.a. Paper I

- Upper Limb
- Thorax
- Head, Face & Neck
- Neuroanatomy
- Related Systemic Histology
- Related Systemic Embryology
- Genetics
- AETCOM – 1 SAQ (Module – 1.3,1.5)

1.3.b. Paper II

- Lower Limb
- Abdomen
- Pelvis
- Related Systemic Histology
- Related Systemic Embryology
- General Anatomy
- General Histology
- General Embryology

1.4. Note to exam paper setters (Ref.: GMER 2019- Assessment)

1.4.A Multiple Choice Questions (MCQs) (20X1=20 Marks)		
• 10 % of MCQ marks should be from clinically based questions (Any 2)		
1.4. B Brief Answer Questions (BAQs) (10X3=30 Marks)		
Various Levels of Cognitive Domain must be considered as follows:		
Level of cognitive domain	**Number of questions**	**Marks**
Knowledge	3	3X3=9
Comprehension	3	3X3=9
Application	2	2X3=6
Analysis	2	2X3=6
Synthesis	1	1X3=3
Evaluation	1	1X3=3
1.4. C Short Answer Questions (SAQs) (6X5=30 Marks)		
1 SAQ will be clinical application based (In section B)		
1 SAQ will be from AETCOM modules (In Paper I)		
Various Levels of Cognitive Domain must be considered as follows:		
Level of cognitive domain	**Number of questions**	**Marks**
Knowledge	2	2X5=10
Comprehension	2	2X5=10
Application	1	1X5=5
Analysis	1	1X5=5
Synthesis	1	1X5=5
Evaluation	1	1X5=5
1.4.D Long Answer Question (LAQ) (2X10=20 Marks)		
• Long Answer Questions (LAQ) in both Papers I & II must be structured, covering various levels of cognitive domain.		

1.4.E Percentage of marks allotted to various levels of cognitive domains:

Level of cognitive domain	**Marks (Total = 76)**	**Percentage (%)**
1. Knowledge	19	25
2. Comprehension	19	25
3. Application	11	15
4. Analysis	11	15
5. Synthesis	8	11
6. Evaluation	8	10

1.4.F Verbs in various levels in Knowledge domain.

Level	Suggested Verbs
Knowledge (Remember)	Define, describe, Draw, Find, Enumerate, Cite, Name, Identify, List, Label, Match, Sequence, Write, State
Comprehension (Understand)	Discuss, Conclude, Articulate, Associate, Estimate, Rearrange, Demonstrate understanding, Explain, Generalise, Identify, Illustrate, Interpret, Review, Summarise
Application (Apply)	Apply, Choose, Compute, Modify, Solve, Prepare, Produce, Select, Show, Transfer, Use
Analysis (Analyze)	Analyse, Characterise, Classify, Compare, Contrast, Debate, Diagram, Differentiate, Distinguish, Relate, Categorise
Synthesis (Create)	Compose, Construct, Create, Verify, Determine, Design, Develop, Integrate, Organise, Plan, Produce, Propose, Rewrite
Evaluation (Evaluate)	Appraise , Assess, Conclude, Critic, Decide, Evaluate, Judge, Justify, Predict, Prioritise, Prove, Rank

(Reference GMER-2019, Assessment Module Page no.17& Revised Bloom's Taxonomy by Anderson, L.W. et al in (2001))

1.5. Paper I

S. No.	Topics	MCQ (20 x 1 = 20 marks)	BriefAnswer Question (BAQ) (10 x 3 = 30 marks)	Short Answer Question (SAQ) (6 x 5 = 30 marks)	Long Answer Question (LAQ) (2 x 10 = 20 marks)	Total Marks
1	Upper Limb / Thorax	3 X 1 = 3 (Upper limb) 3 X 1 = 3 (Thorax)	2 X 3 = 6 Upper Limb/Thorax - from the region not covered in LAQ&SAQ	1 X 5 = 5 (Upper Limb/Thorax - from the region not covered in LAQ& BAQ	1 X 10 = 10 (Upper Limb/Thorax)	27 (as option - 8)
2	Head and Neck / Neuro-anatomy	4 X 1 = 4 (HFN) 4 X 1 = 4 (Neuro-anatomy)	3 X 3 = 9 HFN / Neuroanatomy- from the topic not covered in LAQ& SAQ	1 X 5 = 5 HFN / Neuroanatomy - from the topic not covered in LAQ& BAQ	1 X 10 = 10 HFN / Neuroanatomy	32 (as option - 8)
3	Systemic Histology Thorax / HFN / Neuro-anatomy	2 X 1 = 2	2 X 3 = 6 Thorax/HFN/ Neuroanatomy- from the topic not covered in LAQ& SAQ	1 X 5 = 5 Thorax/ HFN/ Neuroanatomy- from the topic not covered in LAQ& BAQ		13
4	Systemic Embryology Thorax / Head and Neck / Neuro-anatomy	2 X 1 = 2	2 X 3 = 6 Thorax / HFN/ Neuroanatomy - from the topic not covered in LAQ& SAQ	1 X 5 = 5 (Thorax/ HFN/ Neuroanatomy - from the topic not covered in LAQ& BAQ		13
5	Genetics	2 X 1 = 2	1 X 3 = 3 - from different topic thanSAQ	1 X 5 = 5 - from different topic thanBAQ		10
6	AETCOM			1 X 5 = 5		5
			1 extra* question as option from Upper Limb / Thorax / HFN/ Neuroanatomy (Marks are shown as option in respective topic)	1 extra* question as option from Upper Limb / Thorax / HFN/ Neuroanatomy (Marks are shown as option in respective topic)		
			*extra question asked as option should be from different topics for BAQ & SAQ			
	Total	**20**	**30**	**30**	**20**	**100**

1.6. Paper II

S. No.	Topics	MCQ (20 x 1 = 20 marks)	Brief Answer Question (BAQ) (10 x 3 = 30 marks)	Short Answer Question (SAQ) (6 x 5 = 30 marks)	Long Answer Question (LAQ) (2 x 10 = 20 marks)	Total Marks
1	Lower Limb / Pelvis	2 X 1 = 2 Lower Limb 4 X 1 = 4 Pelvis	3 X 3 = 9 Lower limb/ Pelvis - from the topic not covered in LAQ& SAQ	1 X 5 = 5 Lower limb/ Pelvis - from the topic not covered in LAQ& BAQ	1 X 10 = 10 (Lower Limb / Pelvis)	30 (as option - 8)
2	Abdomen	4 X 1 = 4	2 X 3 = 6 - from the topic not covered in LAQ& SAQ	1 X 5 = 5 - from the topic not covered in LAQ& BAQ	1 X 10 = 10 (Abdomen)	25 (as option - 8)
3	Systemic histology Abdomen Pelvis	2 X 1 = 2	1 X 3 = 3 Abdomen/ pelvis - from the topic not covered in LAQ& SAQ	1 X 5 = 5 Abdomen/ Pelvis - from the topic not covered in LAQ& BAQ	-	5 + 5 + 5 = 15
4	Systemic embryology Abdomen Pelvis	2 X 1 = 2	1 X 3 = 3 Abdomen/ Pelvis - from the topic not covered in LAQ& SAQ		-	
5	General Anatomy (GA)	2 X 1 = 2	1 X 3 = 3 - from different topic than SAQ	1 X 5 = 5 - from different topic than BAQ		10 (as option - 8)
6	General Histology (GH)	2 X 1 = 2	1 X 3 = 3 - from different topic than SAQ	1 X 5 = 5 - from different topic than BAQ		10 (as option - 8)
7	General Embryology (GE)	2 X 1 = 2	1 X 3 = 3 - from different topic than SAQ	1 X 5 = 5 - from different topic than BAQ		10 (as option - 8)
			1 extra* question as option from Lower limb/ Pelvis / abdomen / GA / GH / GE (Marks are shown ‘as option’ in respective topic)	1 extra* question as option from Lower limb/ Pelvis / abdomen / GA / GH / GE (Marks are shown ‘as option’ in respective topic)		
			*extra question asked as option should be from different topics for BAQ & SAQ			
	Total	**20**	**20**	**30**	**30**	**100**

2. PRACTICAL EXAMINATION PATTERN

2.1. Total Practical Marks 70 marks

II.1.b Histology	
Spotters	10X 1 = 10 marks
Discussion	10 marks (General Histology – 5 marks; Systemic Histology – 5 marks)
Total	**20 marks**

2.2. Spotters distribution

2.2.b. Histology Spotters distribution (Each Spotter carries 1 mark)	Nos.
General Histology	4
Systemic Histology	6

2.3. TABLE DISCUSSION

Sr. no.	Heading	Marks
1	Soft parts above diaphragm	13
2	Soft parts below diaphragm	12
3	Axial Skeleton	10
4	Radiology	5
5	Surface & living anatomy	5
Total		**45**

2.4. OTHER HEADINGS

Total Marks		**5 marks**
1	Communication Skills	5

2.5. VIVA VOCE EXAMINATION PATTERN

Total Marks		**30 marks**
1	Appendicular skeleton	15 marks
2	Embryology	10 marks
3	Genetics	5 marks
Total		**30 marks**

Eligibility to appear for university exams	
Internal Assessment (Theory + Practical)	50% - Combined theory & practical [Theory - minimum 40% Practical- minimum 40%]
Criteria for pass in university exams	
Theory	50% aggregate (Paper I + II) (Each Paper minimum 40%)
Practical	50%

Resolution No. 4.10 of Academic Council (AC-50/2024): Resolved to approve the structured format of practical examination for prelim & university examination for first **MBBS 2024-25 onwards**. [ANNEXURE-30]

MGM INSTITUTE OF HEALTH SCIENCES, NAVI MUMBAI

MARKSHEET FOR ANATOMY PERLIM & UNIVERSITY PRACTICAL EXAMINATION

PROGRAMME :(FIRST MBBS-CBME) **SUBJECT : ANATOMY**

	Practical										**Oral Viva**				
Seat No.	Histo. Spots 10 slides- one mark each	Histo slide Discussion - 2 Slides (2x5)	Clinical anatomy (5) & Genetics (5) (OSPE)	Axial Skeleton	Embryo (Models)	Soft Parts			Communication skill	**Practical Total**	Appendicular Skeleton	X-ray	Surface Living Anatomy	**Oral Viva Total**	**PR & Oral Total**
	A	**B**	**C**	**D**	**E**	**Soft Parts - Upper Limb, Thorax & HNF**	**Soft parts- Abdomen, pelvis & Lower Limb F2**	**Soft parts - Neuroanatomy F3**	**G**	**H**	**I**	**J**	**K**	**L**	**M**
Marks	10	10	10	10	10	10	10	5	5	**80**	10	5	5	**20**	**100**

Format of question paper

Time – 3 hrs. **Preliminary / University examination**

(* Applicable from 2020-21 Batch onwards)

Each subject – 2 papers (I / II) – 100 X 2 = **Total 200 Marks**
Each paper –

- **Section A** – MCQ – 20 X 1 mark = **20 Marks**
  - **10% MCQ i.e. 2 in each paper must be clinical based**
- **Section B** -

Q1. **Answer any 5 out of 6 (BAQ)** **(5X3 marks =15 marks)**
Q2. **Answer any 3 out of 4 (SAQ)** **(3X5 marks =15 marks)**

- 1 SAQ will be clinical application based
- **1 SAQ will be from AETCOM modules (in Paper I)**

Q3. **Answer any 1 out of 2(LAQ)** **(1X10 marks =10marks)**

- LAQ should be structured (With defined marks distribution)

- **Section C** –

Q1. **Answer any 5 out of 6 (BAQ)** **(5X3 marks =15marks)**
Q2. **Answer any 3 out of 4 (SAQ)** **(3X5 marks =15 marks)**
Q3. **Answer any 1 out of 2 (LAQ)** **(1X10 marks =10marks)**

LAQ should be structured (With defined marks distribution)

Practical Examination (Prelim & University) For Anatomy

Sr. No.	Topic	Marks	Total marks
1	Histology Spots (10 spots)	10 X 1	10
2	Histology Slide Discussion (2 slides)	2 X 5	10
3	Soft parts above diaphragm		13
4	Soft parts below diaphragm		12
5	Axial Skeleton		10
6	Radiology		5
7	Surface & living anatomy		5
8	Communication Skills		5
9	Viva –		30
10	Appendicular skeleton	15	
	Embryology	10	
	Genetics	5	
Total			**100**

For formative exams I & II – practical will be **total 50 marks**

Sr. No.	Topic	Marks	Total marks
1.	Histology Spots (5 spots)	5 X 1	5
2.	Histology Slide Discussion (1 slide)	1 X 5	5
3.	Soft part		15
4.	Embryology		5
5.	Radiology + Surface & living anatomy		5
6.	**Viva** – Bones + communication skill (2)	10+2	12
7.	Journal		3
Total			**50**

SPECIFIC MARK DISTRIBUTION IN MCQ PAPER IN ANATOMY

Paper I

Sr. No.	Topic	No. of Questions
1.	Upper Limb	3
2.	Thorax	3
3.	Systemic Histology	2
4.	Systemic Embryology	2
5.	Head, Face & Neck	4
6.	Neuroanatomy	4
7.	Genetics	2
Total		**20**

Paper II

Sr. No.	Topic	No. of Questions
1.	Lower Limb	2
2.	Abdomen	4
3.	Pelvis	4
4.	Systemic Histology	2
5.	Systemic Embryology	2
6.	General Histology	2
7.	General Embryology	2
8.	General Anatomy	2
Total		**20**

10 % of MCQ marks should be from clinically based questions

Resolution No. 5.8 of Academic Council (AC-48/2023):
i. Resolved to approve internal assessment pattern of theory and practical for first professional MBBS from First MBBS 2023-24 batch onwards, as per new CBME guidelines published on 01.08.2023.
ii. Resolved to approve the final internal assessment pattern of theory and practical [ANNEXURE-12A & 12B], SOP for conduction of continuous internal assessment pattern of theory and practical including Attendance marks distribution tabular format for Anatomy, Physiology and Biochemistry [ANNEXURE-13], updated blueprint of question papers of Anatomy, Physiology and Biochemistry [ANNEXURE-14A, 14B & 14C], AETCOM competency redistribution table with short notes [ANNEXURE-15] which are prepared in alignment with changes mentioned in CBME guidelines published on 01.08.2023.

MGM Institute of Health Sciences, Navi Mumbai

Name of Institute:

Department of Anatomy/Physiology/Biochemistry

Faculty: MBBS	**year/Phase1**		**Date: / /**

		Formative Assessment Theory			**Continuous Internal assessment Theory**						
Roll No.	**Name of Student**	**1st PCT Theory**	**2nd PCT Theory**	**Prelims Theory paper 1 & 2**	**Home Assignment**	**Continuous class test (LMS)**	**Seminar**	**Museum Study**	**Library Assignment**	**Attendance Theory**	**Total**
							Self Directed Learning				
		100	**100**	**200**	**15**	**30**	**15**	**15**	**15**	**10**	**500**

Professor & Head
Department of_____
Name of Institute:

~~Annexure 9B~~

MGM Institute of Health Sciences, Navi Mumbai

Name of Institute:

Department of Anatomy/Physiology/Biochemistry

Faculty:MBBS	**year/Phase1**		**Date: / /**

		Formative Assessment Practical			**Continuous Internal assessment Practical**						
Roll No.	**Name of Student**	**1st PCT Practical Exam**	**2nd PCT Practical Exam**	**Prelims Practical Exam**	**Log Book (150)**				**Journals (Record book/ Portfolio)**	**Attendance Practical**	**Total**
					Certifiable skill-based competencies (Through OSPE/OSCE/ Spots/Exercise/ other	**AETCOM Competencies**	**SVL Lab Activity**	**Research**			
		100	**100**	**100**	**60**	**30**	**40**	**20**	**40**	**10**	**500**

Professor & Head

Department of_____

Name of Institute

Resolution No. 4.8 of Academic Council (AC-50/2024): Resolved to approve changes in format of university & preliminary examination pattern for Theory paper I & II for all the three subjects- Anatomy, Physiology & Biochemistry as per new CBME guidelines dated 12/9/24 with inclusion of 10 scenario based MCQ, reasoning questions in BAQ and clinical as well as integrated topics in SAQ. **[ANNEXURE-28]**

Phase -1 MBBS, CBME (2024-25)

Preliminary / University examination Pattern (Theory)

Paper I & II – 100 X 2 = Total 200 Marks

Each paper – Time – 3 hrs. **Total- 100 Marks**

- **Section A – MCQ – 20 X 1 mark = 20 Marks**
  (Scenario based MCQs shall be accorded a weightage of 10 % of the total marks (100) i.e. 10 Marks in each theory paper)

- **Section B -**
  Q.1. Answer any 5 out of 6 (BAQ) - 5 X 3 =15 marks
  (3 BAQ will be as reasoning question in Paper I & II)

  Q.2. Answer any 3 out of 4 (SAQ) - 3 X 5=15 marks
  (1 SAQ will be clinical application based in paper I&II excluding integrated topics)
  1 SAQ will be from AETCOM modules in Paper I & II)

  Q.3. Answer any 1 out of 2 (LAQ) - 1 X 10 =10 marks
  LAQ should be structured (With defined marks distribution)

- **Section C –**
  Q.1. Answer any 5 out of 6 (BAQ) - 5 X 3 =15 marks
  (3 BAQ will be as reasoning question in Paper I & II)

  Q.2. Answer any 3 out of 4 (SAQ) - 3 X 5=15 marks
  (2 SAQ will be on integrated topic in paper I&II)

  Q.3. Answer any 1 out of 2 (LAQ) - 1 X 10=10 marks
  LAQ should be structured (With defined marks distribution)

Integrated topics: anemia, ischemic heart disease, diabetes mellitus, tuberculosis, hypertension and thyroid.

- **<u>Pattern of Theory PCT I and II is same as above</u>**

- **Syllabus - Paper I & Paper II**

<u>Paper I</u>	**<u>Paper II</u>**
• Upper Limb	• Lower Limb
• Thorax	• Abdomen
• Head, Face & Neck	• Pelvis
• Neuroanatomy	• Related Systemic Histology
• Related Systemic Histology	• Related Systemic Embryology
• Related Systemic Embryology	• General Anatomy
• Genetics	• General Histology
• AETCOM – 1 SAQ (Module – 1.5)	• General Embryology
	• AETCOM – 1 SAQ (Module – 1.4)

~~Annexure-15~~

MGMIHS Navi Mumbai

SOP for conduction of Continuous Internal Assessment for preclinical Departments - Anatomy , Physiology and Biochemistry

(As per NMC guidelines letter No. U. 1 4021 1812023-UGMEB dated 01.08.23)

SOP for conduction of Continuous Internal Assessment Theory/ Practical

1. **Continuous Internal Assessment Theory : Total marks 100**

   A. **Home assignment (15 marks) :**

      Minimum 03 assignments to be submitted by student as per following schedule.

      - **1 st home assignment (5 marks): Before lst PCT i.e. Midterm examination .**
      - **2nd home assignment (5 marks): Before ll nd PCT i.e. First term examination.**
      - **3 rd home assignment (5 marks) : Before lll rd PCT i.e. Prelim examination .**

   B. **Continuous class tests (LMS 30 marks):**

      Minimum 03 class tests MCQ/SAQ/BAQ/LAQ to be conducted throughout the year for total 30 marks.

   C. **Self directed learning (45 marks): 10 hours**

      a. **Seminar (15 marks) : 04 hours**
         - **Each seminar to be given in group of 10-20 students as per directions of HOD of respective department .**
         - **Total time allotted for presentation will be of 8-10 minutes followed by question answer session (maximum 02 min)**

- **Minimum 10 seminar topics should be completed throughout the year in allotted 04 hours for all students per subject i.e. 05 seminars of 10 min duration per hour.**

b. Museum study (15 marks): 03 hours

- **Minimum 01 specimen/model/ poster/ chart /graph/ lab instrument etc relevant to that particular subject should be given as museum study assignment .**
- **If museum is not available in the department or the relevant study material is available in museum of other department then collaboration can be done with that particular department where museum facility is available .**

- **01 Hour will be allotted for 01 assignment .**

- **The students should submit assignments preferably as per given timeline or as decided by concerned HOD before Prelim examination .**

c. Liabrary assignment (15 marks):

- **Minimum 01 liabrary assignment of 03 hours duration per subject to be completed by student in liabrary which will be given by Anatomy, Physiology and Biochemistry departments .**

- **The students should submit assignment preferably as per given timeline or as decided by concerned HOD before Prelim examination .**

- **Students should write assignment preferably on following topics which will be distributed amongst three departments i.e. 01 topic per department should be given to student.**

  1. **Working of Central liabrary ,Various facilities available in liabrary and liabrary research tools, E-resources / e-Database available in liabrary eg proquest ,Uptodate, MUHS Digital liabray ,NDL etc**
  2. **How to use liabrary resources for better research, Concept of textbook, journals ,reference books,**

     e- liabrary.

3. **SWAYAM, Shodhganga, E-Shodhsindhu and Antiplagiarism software**

Attendance (Theory) : 10 marks

Every 10 % attendance in Theory will be given 01 mark.

Students having 75 % attendance in theory and 80 % attendandance in practical will only be eligible to appear for University examination.

Sr. No.	Attendance % (Theory)	Marks
1.	75-80	7.5-8.0
2.	81-85	8.1-8.5
3.	86-90	8.6-9.0
4.	91-95	9.1-9.5
5.	96-100	9.6-10.0

2. Continuous Internal Assessment Practical : Total marks 200

- **A. Logbook : 150 marks**
- **B. Journal : 40 marks**
- **C. Attendance : 10 marks**

A. Logbook : Logbook will have four sections as per following mark distribution.

***Section I : Certifiable skill based competencies**

- **Total marks : 60**
- **Assessment by OSPE/OSCE/Spots/exercises/Others etc evenly distributed throughout year.**

***Section II :AETCOM Competencies (30 marks) to be assessed as per MGMIHS guidelines and evenly distributed throughout year.**

***Section III :SVL Lab activity (40 marks): Minimum 01 activity one per term .**

***Section IV :Research (20 marks) : Students shall do minimum 02 activity /department evenly distributed throughout year like**

1. **Participation in Student induction program on Research .**
2. **Visit to Central Research facilities .**
3. **Small Group Discussion : Students will discuss topic related to research in group of maximum 20 students under supervision of teacher.**
4. **Data Collection**
5. **Simple audit.**
6. **Participation in Poster presentation activity on topics related to Research . One topic can be given to a group of maximum 20 students.**
7. **Any other .**

B. Journal :40 marks

Ist PCT Journal marks : 10

II nd PCT Journal marks :10

Prelim Journal marks: 20

Journal marks will be counted under independent head other than formative practical assessment .

C. Attendance practical : 10 marks

Every 10 % attendance in practical will be given 01 mark.

Sr. No.	Attendance % (Practical)	Marks
1.	75-80	7.5-8.0
2.	81-85	8.1-8.5
3.	86-90	8.6-9.0
4.	91-95	9.1-9.5
5.	96-100	9.6-10.0

Formative assessments (Theory): 400 marks

- **Ist PCT i.e. Midterm examination to be conducted preferably after completing first three months of academic calender or as per MGMIHS academic calender : 100 marks.**

- **II nd PCT i.e. First term examination to be conducted preferably after completing six months of academic academic calender or as per MGMIHS academic calender: 100 marks.**

- **III rd PCT i.e. Prelim examination to be conducted preferably after completing eight months of academic academic calender or as per MGMIHS academic calender : 200 marks.**

Formative assessments (Practical): 300 marks

- **Ist PCT i.e. Midterm examination to be conducted preferably after completing first three months of academic calender or as per MGMIHS academic calender : 100 marks.**

- **II nd PCT i.e. First term examination to be conducted preferably after completing six months of academic academic calender or as per MGMIHS academic calender: 100 marks.**

- **III rd PCT i.e. Prelim examination to be conducted preferably after completing eight months of academic academic calender or as per MGMIHS academic calender : 100 marks.**

Note : Students should attend all internal examinations. If student is unable to attend any exam due to unavoidable circumstances/medical reasons , he will have to take permission of Head of the institution to appear for only one additional examination which will be conducted after prelim exam.

~~**Annexure No. 13A**~~

Item No.	Existing content - Annex. a	Proposed change - Annex. 5
Item No. 1	AETCOM was there in paper I of each subject (Anatomy, Physiology & Biochemistry)	**Changes** – AETCOM is included in paper I & II of each subject (Anatomy, Physiology & Biochemistry). as per **NMC letter No. U. 1 4021 1812023-UGMEB dared 01.08.23**

Proposed Paper I & Paper II Contents

Paper I

- Upper Limb
- Thorax
- Head, Face & Neck
- Neuroanatomy
- Related Systemic Histology
- Related Systemic Embryology
- Genetics
- AETCOM – 1 BAQ (Module – 1.1,1.5)

Paper II

- Lower Limb
- Abdomen
- Pelvis
- Related Systemic Histology
- Related Systemic Embryology
- General Anatomy
- General Histology
- General Embryology
- AETCOM – 1 BAQ (Module – 1.1,1.5)

BLUEPRINT OF UNIVERSITY QUESTION PAPER
1.THEORY EXAMINATION PATTERN

1. 1. Theory Question Paper Pattern:

Two papers each of 3 hours duration and carrying 100 marks each.

1.2. Marks distribution for each paper:

Type of question	Numbers X Marks	Total marks
Multiple Choice Questions	20 X 1	20
Long Answer Questions (LAQ)	2 X 10	20
Short Answer Questions (SAQ)	6 X 5	30
Brief Answer Questions (BAQ)	10 X 3	30
Total		**100**

Each Paper is divided into 3 sections:

Section A: MCQ 20 marks
Section B: 40 marks: BAQ 5/6 x 3= 15; SAQ 3/4 x 5= 15; LAQ 1/2 x 10 = 10

Section C: 40 marks: BAQ 5/6 x 3= 15; SAQ 3/4 x 5= 15; LAQ 1/2 x 10 = 10

1.3. Paper I & Paper II Contents

1.3.a. Paper I

- Upper Limb
- Thorax
- Head, Face & Neck
- Neuroanatomy
- Related Systemic Histology
- Related Systemic Embryology
- Genetics
- AETCOM – 1 BAQ (Module – 1.1&1.5)

1.3.b. Paper II

- Lower Limb
- Abdomen
- Pelvis
- Related Systemic Histology
- Related Systemic Embryology
- General Anatomy
- General Histology
- General Embryology
- AETCOM – 1 BAQ (Module –1.1&1.5)

1.4.Note to exam paper setters (Ref.: GMER 2019- Assessment)

1.4.A Multiple Choice Questions (MCQs) (20X1=20 Marks)		
• 10 % of MCQ marks should be from clinically based questions (Any 2)		
1.4. B Brief Answer Questions (BAQs) (10X3=30 Marks)		
1 BAQ will be from AETCOM modules (In both Paper I & II)		
Various Levels of Cognitive Domain must be considered as follows:		
Level of cognitive domain	**Number of questions**	**Marks**
Knowledge	3	3X3=9
Comprehension	3	3X3=9
Application	2	2X3=6
Analysis	2	2X3=6
Synthesis	1	1X3=3
Evaluation	1	1X3=3
1.4. C Short Answer Questions (SAQs) (6X5=30 Marks)		
1 SAQ will be clinical application based (In section B)		
Various Levels of Cognitive Domain must be considered as follows:		
Level of cognitive domain	**Number of questions**	**Marks**
Knowledge	2	2X5=10
Comprehension	2	2X5=10
Application	1	1X5=5
Analysis	1	1X5=5
Synthesis	1	1X5=5
Evaluation	1	1X5=5
1.4.D Long Answer Question (LAQ) (2X10=20 Marks)		
• Long Answer Questions (LAQ) in both Paper I & II must be structured, covering various levels of cognitive domain.		

1.4.E Percentage of marks allotted to various levels of cognitive domains:

Level of cognitive domain	Marks (Total = 76)	Percentage (%)
1. Knowledge	19	25
2. Comprehension	19	25
3. Application	11	15
4. Analysis	11	15
5. Synthesis	8	11
6. Evaluation	8	10

1.4.F Verbs in various levels in Knowledge domain.

Level	Suggested Verbs
Knowledge (Remember)	Define, describe, Draw, Find, Enumerate, Cite, Name, Identify, List, Label, Match, Sequence, Write, State
Comprehension (Understand)	Discuss, Conclude, Articulate, Associate, Estimate, Rearrange, Demonstrate understanding, Explain, Generalise, Identify, Illustrate, Interpret, Review, Summarise
Application (Apply)	Apply, Choose, Compute, Modify, Solve, Prepare, Produce, Select, Show, Transfer, Use
Analysis (Analyze)	Analyse, Characterise, Classify, Compare, Contrast, Debate, Diagram, Differentiate, Distinguish, Relate, Categorise
Synthesis (Create)	Compose, Construct, Create, Verify, Determine, Design, Develop, Integrate, Organise, Plan, Produce, Propose, Rewrite
Evaluation (Evaluate)	Appraise , Assess, Conclude, Critic, Decide, Evaluate, Judge, Justify, Predict, Prioritise, Prove, Rank

(Reference GMER-2019, Assessment Module Page no.17& Revised Bloom's Taxonomy by Anderson,L.W. et al in (2001))

1.5. Paper I

S. No.	Topics	MCQ (20 x 1 = 20 marks)	BriefAnswer Question (BAQ) (10 x 3 = 30 marks)	Short Answer Question (SAQ) (6 x 5 = 30 marks)	Long Answer Question (LAQ) (2 x 10 = 20 marks)	Total Marks
1	Upper Limb / Thorax	3 X 1 = 3 (Upper limb) 3 X 1 = 3 (Thorax)	2 X 3 = 6 Upper Limb/Thorax - from the region not covered in LAQ&SAQ	1 X 5 = 5 (Upper Limb/Thorax - from the region not covered in LAQ& BAQ	1 X 10 = 10 (Upper Limb/Thorax)	27 (as option - 8)
2	Head and Neck / Neuro-anatomy	4 X 1 = 4 (HFN) 4 X 1 = 4 (Neuro-anatomy)	2 X 3 = 6 HFN / Neuroanatomy- from the topic not covered in LAQ& SAQ	2 X 5 = 10 HFN / Neuroanatomy - from the topic not covered in LAQ& BAQ	1 X 10 = 10 HFN / Neuroanatomy	34 (as option - 8)
3	Systemic Histology Thorax / HFN / Neuro-anatomy	2 X 1 = 2	2 X 3 = 6 Thorax/HFN/ Neuroanatomy- from the topic not covered in LAQ& SAQ	1 X 5 = 5 Thorax/ HFN/ Neuroanatomy- from the topic not covered in LAQ& BAQ		13
4	Systemic Embryology Thorax / Head and Neck / Neuro-anatomy	2 X 1 = 2	2 X 3 = 6 Thorax / HFN/ Neuroanatomy - from the topic not covered in LAQ& SAQ	1 X 5 = 5 (Thorax/ HFN/ Neuroanatomy - from the topic not covered in LAQ& BAQ		13
5	Genetics	2 X 1 = 2	1 X 3 = 3 - from different topic thanSAQ	1 X 5 = 5 - from different topic than BAQ		10
6	AETCOM		1 X 3 = 3 Module 1.1&1.5			3
			1 extra* question as option from Upper Limb / Thorax / HFN/ Neuroanatomy (Marks are shown as option in respective topic)	1 extra* question as option from Upper Limb / Thorax / HFN/ Neuroanatomy (Marks are shown as option in respective topic)		
			*extra question asked as option should be from different topics for BAQ & SAQ			
	Total	**20**	**30**	**30**	**20**	**100**

1.6. Paper II

S. No.	Topics	MCQ (20 x 1 = 20 marks)	Brief Answer Question (BAQ) (10 x 3 = 30 marks)	Short Answer Question (SAQ) (6 x 5 = 30 marks)	Long Answer Question (LAQ) (2 x 10 = 20 marks)	Total Marks
1	Lower Limb / Pelvis	2 X 1 = 2 Lower Limb 4 X 1 = 4 Pelvis	2 X 3 = 6 Lower limb/ Pelvis - from the topic not covered in LAQ& SAQ	1 X 5 = 5 Lower limb/ Pelvis - from the topic not covered in LAQ& BAQ	1 X 10 = 10 (Lower Limb / Pelvis)	27 (as option - 8)
2	Abdomen	4 X 1 = 4	2X 3 = 6 - from the topic not covered in LAQ& SAQ	1 X 5 = 5 - from the topic not covered in LAQ& BAQ	1 X 10 = 10 (Abdomen)	25 (as option - 8)
3	Systemic histology Abdomen Pelvis	2 X 1 = 2	1 X 3 = 3 Abdomen/ pelvis - from the topic not covered in LAQ& SAQ	1 X 5 = 5 Abdomen/ Pelvis - from the topic not covered in LAQ& BAQ	-	5 + 5 + 5 = 15
4	Systemic embryology Abdomen Pelvis	2 X 1 = 2	1 X 3 = 3 Abdomen/ Pelvis - from the topic not covered in LAQ& SAQ		-	
5	General Anatomy (GA)	2 X 1 = 2	1 X 3 = 3 - from different topic than SAQ	1 X 5 = 5 - from different topic than BAQ		10 (as option - 8)
6	General Histology (GH)	2 X 1 = 2	1 X 3 = 3 - from different topic than SAQ	1 X 5 = 5 - from different topic than BAQ		10 (as option - 8)
7	General Embryology (GE)	2 X 1 = 2	1 X 3 = 3 - from different topic than SAQ	1 X 5 = 5 - from different topic than BAQ		10 (as option - 8)
8	AETCOM		1 X 3 = 3 Module 1.1&1.5			3
			1 extra* question as option from Lower limb/ Pelvis / abdomen / GA / GH / GE (Marks are shown 'as option' in respective topic)	1 extra* question as option from Lower limb/ Pelvis / abdomen / GA / GH / GE (Marks are shown 'as option' in respective topic)		
			*extra question asked as option should be from different topics for BAQ & SAQ			
	Total	**20**	**30**	**30**	**20**	**100**

2. PRACTICAL EXAMINATION PATTERN

2.1. Total Practical Marks 100 marks

II.1.b Histology	
Spotters	10X 1 = 10 marks
Discussion	10 marks (General Histology – 5 marks; Systemic Histology – 5 marks)
Total	**20 marks**

2.2. Spotters distribution

2.2.b. Histology Spotters distribution (Each Spotter carries 1 mark)	Nos.
General Histology	4
Systemic Histology	6

2.3. TABLE DISCUSSION

Sr. no.	Heading	Marks
1	Soft parts above diaphragm	13
2	Soft parts below diaphragm	12
3	Axial Skeleton	10
4	Radiology	5
5	Surface & living anatomy	5
Total		**45**

2.4. OTHER HEADINGS

Total Marks		**5 marks**
1	Communication Skills	**5**

2.5. VIVA VOCE EXAMINATION PATTERN

Total Marks		**30 marks**
1	Appendicular skeleton	15 marks
2	Embryology	10 marks
3	Genetics	5 marks
Total		**30 marks**

Eligibility to appear for university exams	
Internal Assessment (Theory + Practical)	50% - Combined theory & practical [Theory - minimum 40% Practical- minimum 40%]
Criteria for pass in university exams	
Theory	50% aggregate (Paper I + II) (Each Paper minimum 40%)
Practical	50%

Subject - **HUMAN ANATOMY (PAPER – I)** Maximum Marks: **100**

Duration – 3 Hours (Section A = 30 Minutes, Section B & C = 2 ½ Hours)

Resolution No. 4.10 of AC-41/2021
effective from 2021-22 onwards and
to be revised as per question paper blue printing format
as per 4.9 of AC-41/2021 in next BOS

SECTION – B

Annexure No. 29A of AC-41/2021

Q.1Answer any 5 out of 6 (SAQ) (5x3 Marks = 15 Marks)

a. List boundaries (2) and contents (1) of axilla
b. Enumerate tributaries of azygos vein
c. Draw a neat labelled diagram of nerve supply of scalp
d. Write any 3 things each, you will do and not do in dissection hall to show your respect for cadaver
e. List features of lateral medullary syndrome with their anatomical basis
f. List any 3 types of modes of inheritance with 1 example of each

Q.2Answer any 3 out of 4 (BAQ) (3x5 Marks = 15 Marks)

A. A 30-year-old7-month pregnant female, slowly developed burning pain in her left thumb, and 1st 2 fingers with exacerbation in night. There is gradual progressive weakness of thenar muscles, with loss of grasping, pinching movements of thumb.
   - What is the name of the condition? (1)
   - Explain the clinical features of this condition with their anatomical basis. (4)

B. Specify development of inter-ventricular septum (4) with its anyone anomaly (1).
C. Write attachments (2), nerve supply (1), action (1) and applied anatomy (1) of Sternocleidomastoid muscle
D. Describe microscopic anatomy of tongue with a neat labelled diagram

Q.3Answer any 1 out of 2 (LAQ) (1x10 Marks = 10 Marks)

A. Describe the mammary gland under the following heads
   a. Grossfeatures – 3
   b. Lymphatic drainage – 2
   c. Arterial supply & venous drainage – 3
   d. Any 2 applied aspects – 2

OR

B. Describe the thyroid gland under following heads
   a. Gross features – 2
   b. Blood supply – 2
   c. Microscopic anatomy – 2
   d. Development – 2
   e. Any 1 applied aspect – 2

SECTION – C

Q.1 Answer any 5 out of 6 (SAQ) (5x3 Marks = 15 Marks)

a. List the extraocular muscles (2) with their nerve supply (1)
b. Enumerate structures forming styloid apparatus
c. What is the extent of external carotid artery? (1) List its branches. (2)
d. Draw and label the diagram of the floor of the IV ventricle
e. List features of Turner syndrome
f. Draw and label the diagram of microscopic anatomy of cornea

Q.2 Answer any 3 out of 4 (BAQ) (3x5 Marks = 15 Marks)

A. Write attachments (2), nerve supply (0.5), action(2) and applied anatomy (0.5) of Deltoid muscle.
B. Explain boundaries of superior mediastinum with diagram (2). List its contents (2) with any 1 applied aspect (1)
C. Describe circle of Willis' as follows – Location (0.5), Formation (1.5), Branches & distribution (2), Any one applied aspect (1)
D. What are pharyngeal arches? (1) List derivatives from cartilage (1), muscle (2), nerve (0.5) and artery of 1st pharyngeal arch (0.5)

Q.3 Answer any 1 out of 2 (LAQ) (1x10 Marks = 10 Marks)

A. Describe arterial supply of heart under the following headings **for each artery** –
Origin (1), Course (2), Branches (3) and Distribution (2).
Also write any 1 applied aspect of arterial supply of heart – (2)

OR

B. Write classification of **white matter** of brain with examples. – 3
Describe **internal capsule** under the following headings –
a) Parts & relations – 2
b) Fibres passing through – 3
c) Applied anatomy – 2

Subject - **HUMAN ANATOMY (PAPER – II)** Maximum Marks: **100**

Duration – 3 Hours (Section A = 30 Minutes, Section B & C = 2 ½ Hours)

SECTION – B

Q.1 **Answer any 5 out of 6 (SAQ)** (5x3 Marks = 15 Marks)

a. Draw neat labelled diagram of blood supply of long bone.
b. What is neural crest? (1) List its derivatives (2)
c. List boundaries (2) and contents (1) of popliteal fossa
d. Draw and label anterior relations of left kidney
e. Explain interior of urinary bladder with a neat labelled diagram
f. List the derivatives of foregut, midgut and hindgut

Q.2**Answer any 3 out of 4 (BAQ)** (3x5 Marks = 15 Marks)

A. Compare microscopic structure of Cardiac and skeletal muscle with diagram
B. 45-year-old alcoholic male came to hospital with complaints of blood in vomiting. On examination he also had dilated tortuous linear swellings radiating from umbilicus.
   A. Name the clinical presentation seen around umbilicus. (1)
   B. What is the common clinical basis leading both the given presentations? (1)
   C. Explain anatomical basis of the both presentations. (3)
C. Describe interior of anal canal with a neat labelled diagram. (4) Write it's any 1 applied aspect. (1)
D. Describe medial longitudinal arch as follows – formation (2), factors maintaining (2) and applied anatomy (1)

Q.3**Answer any 1 out of 2 (LAQ)** (1x10 Marks = 10 Marks)

A. Describe hip joint under following heads
   - Type & bones taking part – 2
   - Relations – 3
   - Movements and muscles – 3
   - Applied anatomy – 2

OR

B. Describe the pancreas under following heads
   - Gross anatomy – 3
   - Blood supply – 2
   - Microscopic anatomy. – 2
   - Ducts – 2
   - Any one applied aspect – 1

SECTION – C

Q.1 **Answer any 5 out of 6 (SAQ)** (5x3 Marks = 15 Marks)

a. List layers of epidermis in thick and thin skin
b. List the structures in the stomach bed
c. Draw neat labelled diagram of microscopic anatomy of duodenum.
d. What is foot drop (1). Explain anatomical basis of its features. (2)
e. Specify the ligaments of spleen with their attachments and contents.
f. List the contents of female superficial perineal pouch

Q.2**Answer any 3 out of 4 (BAQ)** (3x5 Marks = 15 Marks)

A. What is cartilagenous joint? (1) Classify (1) and compare (2) cartilagenous joints with examples (1).
B. What is implantation? (1) Specify its process (3) with any one example of its applied aspect (1)
C. Describe descent of testis (4) with its any 1 applied aspect (1)
D. Write attachments (2), nerve supply (1), action (1) and any one applied aspect (1) of Gluteus maximus muscle

Q.3**Answer any 1 out of 2 (LAQ)** (1x10 Marks = 10 Marks)

A. Describe the uterus under following heads.
- Parts and relations – 4
- Arterial supply – 1
- Supports of uterus – 4
- Any 1 applied aspect – 1

OR

B. Describe the inguinal canal under following heads.
- Boundaries – 4
- Contents – 2
- Any 2 safety mechanisms – 2
- Any one applied aspect – 2

Resolution No. 4.3 of AC=-41/2021: Resolved to approve the booklist for 1st MBBS (CBME) Anatomy with effect from the batch admitted in 2021-22 onwards

~~**Annexure – 5.1**~~

Annexure-22A of AC-41-2021

SR.NO.	NAME OF THE BOOK	EDITION
	GROSS ANATOMY	
1.	BD chaurasia'sHuman Anatomy- vol.1,2,3,4	8th
2.	Vishramsingh'sTextbook of Anatomy- vol. 1,2,3	3rd
3.	Vishramsingh's Textbook of neuroanatomy	4th
4.	BD chaurasia'sGeneral Anatomy	6th
5.	Netter's Human Anatomy Atlas	7th
6.	Grant's Human Anatomy Atlas	13th
7.	Vishramsingh's General Anatomy	
8.	Gray's anatomy for students	
	EMBRYOLOGY	
1.	Textbook of Human Embryology- Yogesh Sontakke	1st
2.	InderbirSingh's Human Embryology	12th
3.	Langman's Medical Embryology	13th
	HISTOLOGY	
1.	Inderbirsingh's Textbook of Human Histology	9th
2.	JP Gunsegaran Textbook of Histology	3rd
3.	Histology text and atlas – Brijesh Kumar	2nd
	GENETICS	
1.	GP Pal Textbook of Medical Genetics	3rd
2.	Human Genetics – S. D. Gangane	4th
	SURFACE ANATOMY AND RADIOLOGY	
1.	Surface and Radiological Anatomy – A. Halim	3rd

Anatomy Textbooks & reference books for MBBS (CBME batch)

REFERENCE

SR.NO.	NAME OF THE BOOK	EDITION
	GROSS ANATOMY	
1.	Gray's Anatomy	41st
2.	Snell's Clinical Anatomy	9th
3.	Neeta Kulkarni's Clinical Anatomy	2nd
4.	A. K. Datta- Essentials of Human Anatomy	9th
	EMBRYOLOGY	
1.	Keith Moore's Clinical Embryology	10th
2.	A. K. Datta- Essentials of Human Embryology	3rd
	HISTOLOGY	
1.	Janqueira's Basic Histology	13th
2.	Difiore's Atlas of Histology	12th
	GENETICS	
1.	Emery's Elements of Medical Genetics	14th

Resolution No. 4.13 of AC-41/2021: Resolved to approve the two books - Communication skills & Early clinical Exposure, as reference books for Medical College Library and departments

1. Communication Skills in Clinical Practice - KR Sethuraman
2. Textbook of Early clinical Exposure Setting and Planning - Dr. Motilal C Tayade

Resolution No. 5.11 of Academic Council (AC-48/2023): Resolved to accept revised books of list for Anatomy, Physiology and Biochemistry from first MBBS 2023-24 Batch onwards **[ANNEXURE-20A].**

LIST OF Anatomy BOOKS FOR FIRST MBBS (CBME batch)-2023-24

SR.NO.	NAME OF THE BOOK	EDITION
	GROSS ANATOMY	
1.	BD chaurasia'sHuman Anatomy- vol.1,2,3,4	8th
2.	Vishramsingh'sTextbook of Anatomy- vol. 1,2,3	3rd
3.	Vishramsingh'sTextbook of neuroanatomy	4th
4.	BD chaurasia'sGeneral Anatomy	6th
5.	Netter's Human Anatomy Atlas	7th
6.	Grant's Human Anatomy Atlas	13th
7.	Vishramsingh's General Anatomy	
8.	Gray's anatomy for students	
	DISSECTOR MANUAL	
1.	Thieme Dissector- vol.1,2,3	2nd
2.	Cunningham's Manual of Practical Anatomy- vol.1,2,3	16th
	EMBRYOLOGY	
1.	Textbook of Human Embryology- Yogesh Sontakke	1st
2.	InderbirSingh's Human Embryology	12th
3.	Langman's Medical Embryology	13th
	HISTOLOGY	
1.	Inderbirsingh's Textbook of Human Histology	9th
2.	JP Gunsegaran Textbook of Histology	3rd
3.	Histology text and atlas – Brijesh Kumar	2nd
	GENETICS	
1.	GP Pal Textbook of Medical Genetics	3rd
2.	Human Genetics – S. D. Gangane	4th
	SURFACE ANATOMY AND RADIOLOGY	
1.	Surface and Radiological Anatomy – A. Halim	3rd
	AETCOM	
1.	Salubris Prep Manual Of AETCOM	1st

Resolution No. 5.11 of Academic Council (AC-48/2023): Resolved to accept revised books of list for Anatomy, Physiology and Biochemistry from first MBBS 2023-24 Batch onwards **[ANNEXURE-20A].**

LIST OF Anatomy BOOKS FOR FIRST MBBS (CBME batch)-2023-24

REFERENCE

SR.NO.	NAME OF THE BOOK	EDITION
	GROSS ANATOMY	
1.	Gray's Anatomy	41st
2.	Snell's Clinical Anatomy	9th
3.	Neeta Kulkarni's Clinical Anatomy	2nd
4.	A. K. Datta- Essentials of Human Anatomy	9th
	EMBRYOLOGY	
1.	Keith Moore's Clinical Embryology	10th
2.	A. K. Datta- Essentials of Human Embryology	3rd
	HISTOLOGY	
1.	Janqueira's Basic Histology	13th
2.	Difiore's Atlas of Histology	12th
	GENETICS	
1.	Emery's Elements of Medical Genetics	14th
	EARLY CLINICAL EXPOSURE	
1.	A Case Based Approach in Clinical Anatomy-Ajay Kumar, Anu Sharma	1st
2	Clinical Case Discussion in Anatomy- Ritesh Shah	1st
3.	Communication Skills in Clinical Practice - KR Sethuraman	
4.	Textbook of Early clinical Exposure Setting and Planning - Dr. Motilal C Tayade	

Resolution No. 3.4 of Academic Council (AC-42/2022): Resolved to approve model question papers of Anatomy as per subject blueprint and addition of point about available choice of option in LAQ of both papers (Sections B & C) in Anatomy blueprint for First MBBS theory with effect from the batch admitted in academic year 21-22.

Annex-4a

This change is to be included in pattern of examination in CBME curriculum Anatomy for First MBBS. [ANNEXURE-6A & 6C]

Annex-6A of AC-42/2022

Department of Anatomy, MGM Medical College, Navi Mumbai
1st year MBBS
University Examination – Paper 1

INSTRUCTIONS

1. Attempt all questions
2. Maximum marks are indicated in the right
3. Illustrate the answers with suitable diagrams wherever necessary
4. Mobile phones, pagers, bluetooth or any others such communication devices are not allowed in examination premises and in the adjacent area.

Section A (20X1mark = 20 marks)

1. What structure does NOT lie in the anatomical snuff box?
   a) Cephalic vein
   b) Radial artery
   c) Scaphoid
   d) Extensor pollicis longus
2. Flexor retinaculum is not attached to which bone?
   a) Scaphoid
   b) Trapezoid
   c) Pisiform
   d) Hamate
3. Which muscle arises from both the radius and ulna?
   a) Extensor pollicis longus
   b) Extensor pollicis brevis
   c) Abductor pollicis longus
   d) Abductor pollicis brevis
4. Which one is not the content of posterior mediastinum?
   a) Esophagus
   b) Descending aorta
   c) Arch of aorta
   d) Vagus nerve
5. Rough part of left ventricle develops from which structure?
   a) **Primitive ventricular chamber**
   b) Proximal part of bulbus cordis
   c) Middle part of bulbus cordis
   d) Distal part of bulbus cordis
6. Left superior intercostal vein opens in which vein?
   a) Left brachiocephalic vein
   b) Superior vena cava
   c) Azygos vein
   d) Hemi- azygos vein

7. Non fusion of which of the following processes will result in unilateral cleft lip?
   a. Medial and lateral nasal
   b. Medial nasal and maxillary
   c. Lateral nasal and maxillary
   d. Maxillary and mandibular
8. Left subclavian artery develops from which of the following?
   a) **Left 7th intersegmental artery**
   b) 1st arch artery
   c) 2nd arch artery
   d) 6th arch artery
9. What is the epithelium of cornea?
   a) Stratified squamous keratinized
   b) Stratified squamous non- keratinized
   c) Stratified columnar
   d) Simple columnar
10. Which is not a part of blood air barrier?
   a) Pneumocyte II
   b) Alveolar basal lamina
   c) Endothelium
   d) Connective tissue between 2 basal laminae
11. Which muscle takes origin from stylohyoid ligament?
   a) Superior constrictor
   b) **Middle constrictor**
   c) Inferior constrictor
   d) Thyropharyngeus
12. What is the nerve supply of tensor veli palatini?
   a) Pharyngeal plexus
   b) Accessory nerve
   c) **Mandibular nerve**
   d) Maxillary nerve
13. Ligament of Berry is formed by which structure?
   a) **Investing layer of cervical fascia**
   b) Pretracheal fascia
   c) Prevertebral fascia
   d) Buccopharyngeal fascia
14. Which structure is continuous with membrana tectoria?
   a) Posterior atlanto-occipital membrane
   b) Anterior atlanto-occipital membrane
   c) **Posterior longitudinal ligament**
   d) Transverse ligament

15. What is the type of lunate sulcus?
    a) Limiting
    b) Axial
    c) **Operculated**
    d) Complete
16. What is corpus striatum?
    a) **Caudate and lentiform nucleus**
    b) Caudate nucleus
    c) Lentiform nucleus
    d) Globus pallidus and putamen
17. Which of the following areas is not supplied by middle cerebral artery?
    a) Paracentral lobule
    b) Superior temporal gyrus
    c) Temporal pole
    d) Lateral part of orbital surface
18. Filum terminale is extension of which structure?
    a) Dura mater
    b) Central part of cauda equina
    c) **Pia mater**
    d) Arachnoid mater
19. How many chromosomes are seen in triploidy?
    a) 46
    b) 47
    c) 45
    d) **69**
20. Which type of inheritance is seen in Hemophilia A?
    a) Autosomal recessive
    b) Autosomal dominant
    c) **X linked recessive**
    d) X linked dominant

Department of Anatomy, MGM Medical College, Navi Mumbai

1st year MBBS

University examination – Paper 1

Duration – 3 Hours (Section A = 30 Minutes, Section B &; C = 2 ½ Hours)

INSTRUCTIONS:

(1) Attempt all questions
(2) Maximum marks are indicated in the right
(3) Illustrate the answers with suitable diagrams wherever necessary
(4) Please surrender your SWITCHED OFF cell phones at entry point into the Examination Hall
(5) Mobile phones, pagers, blue tooth or any other such communication devices are not allowed in the Examination premises and in the adjacent area

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Section B

Q1. Answer any 5 (5X3marks=15 marks)

a. Name the clinical condition showing flexed wrist with inability to extend. Explain anatomical basis of this condition (2) and name the damaged structure (1).
b. Discuss cells of anterior pituitary with their staining property and secretions.
c. List structures contributing to development of interatrial septum. (2) Write anyone developmental anomaly of interatrial septum (1)
d. What is Barr body? Mention its clinical significance
e. A 47 years old male with history of liver cirrhosis comes with breathlessness. On radiographic examination there is obliteration of bilateral costophrenic angles.
   A. What is the condition leading to such radiographic presentation? (1)
   B. Explain anatomical basis of this radiographic presentation. (2)
f. During clinical examination of a person, he was unable to hold paper between his last 3 fingers, when examiner tried to pull out the paper. Which are the likely weak muscles being tested? (2). Write their nerve supply. (1)

Q2. Answer any 3 (3X5marks=15 marks)

A. Which blood vessel is used for BP measurement in arm? (0.5) Name the anatomical space in which this vessel terminally divides and write boundaries of this space (2) Mention extent (0.5) and branches of this vessel (1). Enumerate contents of the above mentioned space with their relation to each other . (1)
B. List layers seen in microscopic anatomy of cerebellar cortex(1). Describe microscopic structure of its layers with a neat labelled diagram (3). Mention structure and function of Purkinje cell (1)
C. Justify the following - “Cadaver is our first teacher”
D. A 59 years old male patient has complaints of breathlessness which increases on lying down. Also there is cough, hoarseness of voice and difficulty in swallowing. He has facial oedema with upper chest showing dilated veins. A. Determine one possible condition which can explain the whole clinical presentation? (1) B. Explain the anatomical basis of

breathlessness, hoarseness of voice, difficulty in swallowing and dilated veins on upper chest based on your understanding of the causative clinical condition. (4)

Q3. Answer any 1 (10 marks)

Which type of joint is shoulder joint? (1) Write its articular surfaces (1). Explain its relations (3). Analyse its movements as per their axis, range and prime movers (3) Explain features and anatomical basis of its any 1 applied aspect (2)

OR

65 years old male has severe chest pain, radiating along left arm, profuse sweating. He is a chronic smoker. He has history of similar but less severe pains felt during exercise over last 6 months. The pain used to ease after rest. His ECG was taken and he was advised angiography.

a. Which organ is likely to be involved in this case to cause the given presentation? (1)
b. Discuss arterial supply of this organ with neat labelled diagram, under the following headings – Origin (1), Course (2), Branches and Distribution (4) of each artery
c. Explain anatomical basis of the above-mentioned clinical presentation. (2)

Section C

Q1. Answer any 5 (5X3marks=15 marks)

a. 'Posterior cricoarytenoid muscle is the sole abductor of vocal cord' - Justify the statement on basis of muscle attachments and mechanism of abduction.
b. Draw and label microscopic structure of retina
c. Explain nerve supply of tongue on its developmental basis
d. In case of pulsating exophthalmos with ophthalmoplegia - determine the structure involved and explain clinical features with their anatomical basis
e. List various nuclei of spinal cord and explain their location and type based on development
f. In case of dilated both lateral and third ventricle, apply your understanding of CSF circulation and decide level of blockage. Write normal CSF circulation as explanation for the same

Q2. Answer any 3 (3X5marks=15 marks)

A. Discuss mesodermal derivatives of 1st pharyngeal arch
B. Describe Turner syndrome as its genotype, phenotype and causes.
C. Discuss formation, extent and contents of carotid sheath with mention of any one applied aspect
D. A patient comes with left side hemiplegia and ptosis on right side, lateral squint, dilated fixed pupil. Analyse the features and answer following - what clinical condition can explain all features? (1) Discuss its cause (1) and anatomical basis for all features.(3)

Q3. Answer any 1 (10 marks)

Describe gross features and relations of the parotid gland (5) Explain its nerve supply (2) In patient with complaints of sweating on face while eating - determine the possible clinical condition and explain its anatomical basis (3)

OR

Classify white matter of cerebrum with examples. (2) Describe Parts of internal capsule with their relations (3). If hypertensive patient comes with right side hemiplegia and loss of sensations - determine which part of the capsule is involved with its anatomical basis. (2) Discuss blood supply and fibres passing through different parts of internal capsule (3)

1st MBBS - Anatomy Model Question Paper 1 – Blue Print Analysis											
Question	**Level**	**Topic**								**Total no. of questions**	**Total Marks**
		UL	**Thorax**	**HFN**	**Neuro**	**SH**	**SE**	**Genetics**	**AETCOM**		
MCQs		1,2, 3	4,5,6	11,12 13 ,14	15,16, 17,18	9,10	7,8	19,20		20	20
Q. 1. BAQ 5 out of 6 Each FOR Sections B & C	**K**				C-1e		B-1c	B-1d		3	9
	C					B-1b, C-1b	C-1c			3	9
	Ap	B-1a			C-1f					2	6
	An	B-1f	B-1e							2	6
	E			C-1a						1	3
	S			C-1d						1	3
Q. 2. SAQ 3 out of 4 Each FOR Sections B & C	**K**					B-2b		C-2b		2	10
	C			C-2c			C-2a			2	10
	Ap	B-2a								1	5
	An				C-2d					1	5
	E								B-2c	1	5
	S		B-2d							1	5
Q. 3. LAQ 1 out of 2 Each FOR Sections B & C	**K, C An**	B-3a									10
	K, C An		B-3b								
	K, C E			C-3a							10
	K, C An, S				C-3b						
MCQs - 20		3	3	4	4	2	2	2		20	20/20
BAQ - Any 10		2	1	2	2	2	2	1		12	30 /36
SAQ - Any 6		1	1	1	1	1	1	1	1	8	30 /40
LAQ - Any 2		1	1	1	1					4	20 /40

Department of Anatomy, MGM Medical College, Navi Mumbai
1st year MBBS
University Examination – Paper 2

INSTRUCTIONS

5. Attempt all questions
6. Maximum marks are indicated in the right
7. Illustrate the answers with suitable diagrams wherever necessary
8. Mobile phones, pagers, bluetooth or any others such communication devices are not allowed in examination premises and in the adjacent area.

Section A (20X1mark = 20 marks)

1. Which of the following is a bipennate muscle?
   a) Tibialis anterior
   b) Peroneus tertius
   c) Extensor digitorum longus
   d) **Rectus femoris**
2. What is the type of talo-calcaneo-navicular joint?
   a) Saddle
   b) Pivot
   c) **Ball & socket**
   d) Condylar
3. Which of the following is not supplied by superior gluteal nerve?
   a) Tensor fascia lata
   b) Gluteus medius
   c) Gluteus minimus
   d) Piriformis
4. What is the position of foot in clinical condition due to injury to common peroneal nerve at the neck of fibula?
   a) Plantar flexed and inverted
   b) **Only plantar flexed**
   c) dorsiflexed and inverted
   d) Plantar flexed and enverted
5. Gastric glands are derived from which of the following structure?
   a) Ectoderm
   b) Splanchnopleuric mesoderm
   c) Somatopleuric mesoderm
   d) Endoderm
6. Which is not a derivative of neural crest cell?
   a) Pigment cell
   b) Schwann cell
   c) **Astrocyte**
   d) Pia mater

7. Passage of sperms towards tubal ampulla around ovulation time is not helped by which of the following?
    a) Muscular contraction of uterus
    b) Prostaglandins
    c) Thick, copious cervical mucus
    d) Sperm motility
8. Which one of the following is not a derivative of foregut?
    a) Liver
    b) **Spleen**
    c) Pancreas
    d) Gall bladder
9. Which is the most common position of appendix?
    a) Pelvic
    b) Subcaecal
    c) **Retrocaecal**
    d) Splenic
10. Duodenum is identified histologically by the presence of which structure?
    a) Parietal cells
    b) Serous acini
    c) **Brunner's glands**
    d) Stratified squamous epithelium
11. Which is not the content of ischio-anal fossa?
    a) Inferior rectal nerve and vessels
    b) Pudendal nerve and internal pudendal vessels
    c) Middle rectal vessels
    d**)** Ischio-anal pad of fat
12. Which is narrowest part of male urethra?
    a) Prostatic
    b) **Membranous**
    c)Preprostatic
    d) Penile
13. Ovarian vein opens in which vein on left side?
    a) Inferior vena cava
    b) **Renal vein**
    c) External iliac vein
    d) Internal iliac vein
14. Inferior rectal artery is a branch of which artery?
    a) Internal iliac artery
    b) Inferior mesenteric
    c) **Internal pudendal**
    d) Superior mesenteric
15. What is the epithelium of vas deferens?

a) Simple columnar
b) Stratified columnar
c) Pseudostratified columnar
d) Tall columnar

16. Which of the following forms posterior wall of rectus sheath below arcuate line?
a) Internal oblique aponeurosis
b) Transversus abdominis
c) Fascia transversalis
d) All three flat muscles of abdominal wall

17. Which cells secrete components of the matrix?
a) **Osteoblast**
b) Osteoclast
c) Osteocyte
d) Osteogenic cells

18. Which junction is needed for ion transport and synchronous function of group of cells?
a) Gap
b) Tight
c) Adhesive
d) Anchoring

19. Which of the following structure is not seen in porta hepatis?
a) Hepatic artery
b) **Hepatic vein**
c) Portal vein
d) Hepatic duct

20. Which is unpaired branch of abdominal aorta?
a) Gonadal artery
b) **Superior mesenteric artery**
c) Inferior phrenic artery
d) Middle suprarenal artery

Department of Anatomy, MGM Medical College, Navi Mumbai

1st year MBBS

University examination – Paper 2

Duration – 3 Hours (Section A = 30 Minutes, Section B &; C = 2 ½ Hours)

INSTRUCTIONS:

(1) Attempt all questions
(2) Maximum marks are indicated in the right
(3) Illustrate the answers with suitable diagrams wherever necessary
(4) Please surrender your SWITCHED OFF cell phones at entry point into the Examination Hall
(5) Mobile phones, pagers, blue tooth or any other such communication devices are not allowed in the Examination premises and in the adjacent area

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Section B

Q1. Answer any 5 (5X3marks=15 marks)

a. Write similarities and differences between 2 menisci and with application of this knowledge explain 'Medial meniscus is more prone to injuries'
b. Compare between small and large intestine
c. Draw and label microscopic structure of liver
d. List types of neuroglial cells with 1 function of each
e. What is implantation? Discuss sites and causes of abnormal implantation
f. Illustrate similarities and differences between anterior relations of both kidneys with neat labelled diagrams

Q2. Answer any 3 (3X5marks=15 marks)

A. 50-year-old policeman has dull ache in both legs with enlarged twisted and tortuous structures seen on the medial side of his both legs and right thigh. A. Name the described clinical condition. (1) B. Describe the extent and course of the involved structure in this case? (2) C. Explain possible causes and their anatomical basis which usually lead to this clinical condition. (2)
B. Discuss similarities and differences between microscopic structure of Cardiac and skeletal muscle with diagram
C. What is primitive Streak? Write its formation, parts, functions and applied anatomy
D. A 55 years old multiparous female comes with complaints of mass felt to come out per vaginum especially during straining. A. Determine the possible condition which can explain the clinical presentation? (1) B. Explain the anatomical basis of these clinical features. (2).Discuss any 3 important structures which normally prevent occurrence of this clinical condition (2)

Q3. Answer any 1 **(10 marks)**

Classify the arches of foot (2) Explain their Formation (3) Discuss factors maintaining arches (3) Explain features and anatomical basis of its any 1 applied aspect (2)

OR

Describe gross external & internal features of the urinary bladder (4) Specify its ligaments (2)
In case of discharge of urine at umbilicus - determine a congenital condition and discuss development of bladder with basis for this presentation

Section C

Q1. Answer any 5 **(5X3marks =15 marks)**

a. A 12-year-old boy, following a painful intramuscular injection in the left gluteal region developed severe pain and weakness of left lower limb with foot drop
   Name the structure which is affected in this case. (1) What is the anatomical basis for the clinical presentation? (2)
b. Compare parts of anal canal above and below pectinate line
c. 45 years old alcoholic male came to hospital with complaints of blood in vomiting and dilated tortuous linear swellings radiating from umbilicus.
   A. Name both the clinical presentations (1)
   B. Determine the common clinical basis leading to them both (1)
   C. Explain anatomical basis of any one of them. (1)
d. List derivatives of mesonephric duct in male and female
e. Discuss similarities and differences in microscopic structure of hyaline and elastic cartilage with examples
f. Specify boundaries of femoral canal and apply this to knowledge to explain basis of course of femoral hernia

Q2. Answer any 3 **(3X5marks=15 marks)**

A. A 35 year old male comes with history of infertility. He has dilated tortuous swellings on his testes. Decide what is this clinical condition based on given features. (1). Describe relevant anatomy (1) and explain anatomical basis of this condition (3)
B. Describe microscopic structure of Testis with development, structure and function of any of its 2 cells (3+2)
C. What is epiphysis? (1) Discuss typres of epiphyses with examples. (3) State law of epiphyseal fusion (1)
D. A 35 year old female corporate employee comes with complaints of severe burning epigastric pain, bloating and vomiting. She is advised endoscopic examination of her upper GIT.

Analyse the clinical features & determine the affected organ with name of the clinical condition. (1) Discuss arterial supply of the affected organ (2). Explain basis of commonest site in the organ for this clinical condition with respect to its arterial supply (2)

Q3. Answer any 1 (10 marks)

What are boundaries of inguinal canal (3). Discuss its contents in male and female (3) Compare similarities and differences between direct and indirect inguinal hernia (4)

OR

Describe gross features and duct system of the pancreas (3) Specify its blood supply with neat labelled diagram (3).
In case of duodenal and bile duct obstruction - determine a congenital reason and discuss development of pancreas with basis for this presentation (4)

Question	Level	Topics								Total no. of questions	Total Marks
		LL	Abdo	Pelvis	SH	SE	GA	GH	GE		
MCQs		3,4	9,16, 19,20	11,12, 13,14	10, 15	5,8	1,2	17, 18	6,7	20	20
Q. 1. BAQ 5 out of 6 Each FOR Sections B & C	**K**				B-1c	C-1d	B-1d			3	9
	C		B-1f					C-1e	B-1e	3	9
	Ap	B-1a, C-1f								2	6
	An		B-1b	C-1b						2	6
	E	C-1a								1	3
	S		C-1c							1	3
Q. 2. SAQ 3 out of 4 Each FOR Sections B & C	**K**				C-2b				B-2c	2	10
	C						C-2c	B-2b		2	10
	Ap	B-2a								1	5
	An		C-2d							1	5
	E		C-2a							1	5
	S			B-2d						1	5
Q. 3. LAQ 1 out of 2 Each FOR Sections B & C	**K, C An**	B-3a									10
	K, C An, E			B-3b							
	An		C-3a								10
	K, C An		C-3a								
MCQs - 20		2	4	4	2	2	2	2	2	20	20
BAQ - Any 10		3	3	1	1	1	1	1	1	12	30 /36
SAQ - Any 6		1	2	1	1		1	1	1	8	30 /40
LAQ - Any 2		1	2	1						4	20 /40

Resolution No. 3.6 of Academic Council (AC-42/2022): Resolved to continue the existing method for additional exam for Ist MBBS (CBME) as per guidelines given by NMC in First MBBS Anatomy/ Physiology/Biochemistry for theory/Practical.

Resolution No. 3.19 of Academic Council (AC-42/2022): It is resolved to approve all the suggestions given by NMC Undergraduate board as per NMC Notification dated 31.03.2022 related to First MBBS Anatomy/Physiology/ Biochemistry except Point No. 7 in relation to Oath ceremony, with effect from the batch admitted in academic year 21-22. [ANNEXURE- 16]

Annex-16 of AC-42/2022

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राष्ट्रीय आयुर्विज्ञान आयोग

Annex-15

National Medical Commission
(Undergraduate Medical Education Board)

No. U.11026/1/2022-UGMEB **Dated the 31st March, 2022**

Circular

Subject : Implementation of new Competency Based Medical Education for Undergraduate Course Curriculum.

The new Competency Based Medical Education for Undergraduate Course Curriculum was discussed in detail in the 6th meeting of National Medical Commission, which was held on 24th March, 2022 at New Delhi.

2. After detailed discussion and deliberation, it has been unanimously decided in the said meeting of the Commission to implement new Competency Based Medical Education for Undergraduate Course Curriculum from the current batch of MBBS students i.e. 2021-22, admitted in the month Feb-March 2022.

3. The new Competency Based Medical Education for Undergraduate Course Curriculum would is being implemented with the objective of covering all three domains of learning (Cognitive, Affective & Psychomotor). The new course curriculum introduced in August 2019 enriches the medical student with a sound base and balanced approach to overall aspect with the introduction of foundation course which includes Family Adoption Programme, Yoga, meditation, Local Language adaptation and skills.

4. All State Governments/UTs, universities and medical colleges/institutes are requested to take immediate necessary steps to implement the new Competency Based Medical Education for Undergraduate Course Curriculum from the current batch of MBBS students i.e. 2021-22, admitted in the month Feb-March 2022.

(Dr. Aruna V. Vanikar)
President

Encl:

(i) Guidelines for implementation of new CBME Course curriculum.
(ii) Academic Calendar for MBBS Batch
(iii) Month-wise schedule of new CBME Course
(iv) Curriculum for Family Adoption Programme
(v) Brief modified transliteration of Maharshi Charak Shapth

Guidelines for implementation of new CBME Course curriculum for MBBS batch 2021-22 admitted in Feb-March 2022

1. The said guidelines are for the UG CBME **2021 (admitted in 2022)** batch.
2. The curriculum of UG CBME 2021 will begin from **14th Feb 2022**in all medical colleges across the country. The basic framework and inclusions of CBME will not be disturbed as they are vital components of outcome-based education. It is mainly the **redistribution of hours**in view of COVID-19 pandemic within the time frame that needs consideration for 2021-'22 (admitted in Feb. 2022) batch.
3. Redistribution with timeline of professional years for 2021-'22 (admitted in Feb. 2022) is provided in slides herewith.

Since the duration for 1st professional has been reduced from 14 months to 12months, the period can be adjusted by :

a. Having one week of Foundation Course at the beginning of the academic calendar and thenspreading remaining three weeks of Foundation Course in first six months beyond curricular hours
b. Allocating Sports & Extracurricular hours for regular teaching
c. Reducing duration of vacation (1 week in Summer &1 week in Winter, at the discretion of University and college)
d. Final, 1st exams will be for Forensic Medicine, Toxicology and Community Medicine
e. All clinical subjects will be taught as per curriculum parallel and exams will be covered under NEXT.

4. **Early clinical exposure and Integration**retained since theyare all teaching-learning methods/strategies for addressing identified competencies.

5. **Self directed learning (SDL):** Some SDL hours can be reduced, specifically from Phase-I subjects like Anatomy (there are 40 hours), Physiology (20 hours). Some SDL hours can go beyond office hours if required(as such also students may be required to do certain things for SDL beyond regular hours).

6.**Electives**promote academic flexibility and may be offered onsite based on student's need and choice. One month of Electives (Block A & B, 15 days each) can be adjusted for this batch, wherein Block A (pre/para clinical electives) can have electives along with clinical postings and Block B (clinical electives) without clinical posting.

7. **Family adoption** program is recommended as a part of curriculum of Community Medicine and should begin from 1st professional year and remain throughout the curriculum. The orientation towards the same may be a part of foundation course under the theme of 'Field visit to community health centre' (8 hrs) which is already allocated to foundation course in GMER 2019.

The family adoption shall include villages not covered under PHC adopted by medical college, and if travel time from college to site is more than 2 hours on week-ends, in such situation, bastis / jhuggis/ towns or on outskirts of cities may be adopted.

7. Modified 'Maharshi CharakShapath' isrecommended when a candidate is introduced to medical education.

8. Yoga training is recommended to be initiated duringfoundation course,(1hour, preferably in the morning in orientation week). Yoga practices shall be for maximum 1 hour every day during theperiod of 10 days beginning from 12th June every year to be culminated on International Yoga day, i.e. 21st June, to be celebrated in all medical schools across the country. These may be practiced by all batches of MBBS. Yoga module will be made available to all

colleges by UGMEB- NMC. However colleges may adopt their own modules. Yoga unit may be inducted under PMR department or any other department of all colleges at their discretion.

9. **Assessment**: A robust continuous formative and internal assessment is required to ensure competencies and thereby a competent medical graduate. If required, we can have two internal assessments and the third internal assessment can be calculated from various unitary and continuous tests taken throughout the year.

10: **Supplementary examinations**:Supplementary exam be conducted between 4 to6 weeks from the date of declaration of results of regular university examinations. The result of Supplementary examinations be declared within 10 days from the date of completion of examinations.

11. There shall be no supplementary/ repeater batch. For students who fail in their university examination:

- Students who pass in 1st MBBS supplementary examination shall be offered special classes and ward postings to cover up the syllabus, so that he/she copes up with subjects. Subsequently (after passing in supplementary examination) the student shall continue with his/her regular batch. Attendance of special classes/ postings for such studentsshall be counted. Students who fail to pass in supplementary examination, shall be joining the subsequent junior batch.

- Students who pass in 2nd MBBS supplementary examination shall be offered special classes and ward postings to cover up the syllabus, so that he/she copes up with subjects. The student shall not join classes of the Final MBBS till he/she is given a chance of passing in first supplementary examination. He/she shall continue with his regular batch after passing in supplementary examination of 2nd MBBS.

Attendance of special classes/ postings be counted. Students who fail to pass in supplementary examination of 2nd MBBSmay be allowed to continue with his/her regular batch. However the student shall have to pass 2nd MBBS before taking up Final MBBS examination, as per the existing guidelines.

12. Details and guidelines on NEXT examination shall be notified by NMC.

ACADEMIC CALENDER FOR MBBS BATCH(2021-22) ADMITTED IN FEB-MAR 2022

Professional year	Time frame	Months available (Teaching + Exam)	Comparison with GMER 2019
1st	14th Feb '22 to 31st Jan '23, Exam - Feb.	11.5 months (incl. F.C.) Exam , Result = 1 month	14 months (incl. one month FC)
2nd	1st March,'23 to 29th Feb,'24 Exam- March, '24	12 months Exam , Result = 1 month	12 months
3rd(III-part-1)	1st April,'24 to 15th Jan,'25, Exam – till 31th Jan, '25	9.5 months Exam - 15 days (FMT, Community Med)	13 months
Electives + results	Block A–(first half) Feb, '25 Block B–(second half) Feb, '25	1 month	2 months
4th(III-part-2)	1st March,'25 to 31st March, '26	13 months NeXT (theory) – April, '26 Univ. (practical) – April, '26	13 months
Internship	1st May, '26 to 30th April '27,	12 months	12 months
NeXT & Counselling	May, June, '27	Counselling before 15th June	1 month
PG	July, '27		

MONTH-WISE SCHEDULE FOR NEW CBME COURSE FOR MBBS BATCH 2021-22 JOINED IN FEB-MAR 2022

MBBS	1	2	3	4	5	6	7	8	9	10	11	12
2022	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
	months	14TH-1	2	3	4	5	6	7	8	9	10	11
2023	12	Exam, Results	2ND PROF-1	2	3	4	5	6	7	8	9	10
2024	11	12	Exam, Results	3RD 1ST- 1	2	3	4	5	6	7	8	9
2025	10- exam in 2nd half	11-Electives	12	13	14	15	16	17	18	19	20	21
2026	22	23	24	25- NEXT & Univ. final practical, Results	INTERNSHIP-1	2	3	4	5	6	7	8
2027	9	10	11	12	NEXT, counselling	counselling	PG					

CURRICULUM FOR FAMILY ADOPTION PROGRAMME

Need of the Program:

In India, around 65.5 % of population resides in rural settings (as per 2020 statistics) whereas availability of health care facilities and services are skewed towards urban set ups. Though adequate healthcare supplies exist in the community, it is the access to healthcare to a rural citizen that is a major concern. Issues like health illiteracy, ignorance about communicable and non communicable diseases, means to reach health care facility, services, take time off from their daily wages work and workforce shortages are some of the barriers that limits timely and quality health related awareness and care leading to a scenario of 'Scarcity in abundance'. Hence there is a need to take measures to make healthcare more accessible to the rural and needy population and impart community based and community oriented training to budding healthcare professionals.

Aim:

Family adoption program aims to provide an experiential learning opportunity to Indian Medical graduates towards community based health care and thereby enhance equity in health.

Objectives of the Program:

During the Medical UG training program, the learner should be able to :

1. Orient the learner towards primary health care
2. Create health related awareness within the community
3. Function as a first point of contact for any health issues within the community
4. Act as a conduit between the population and relevant health care facility
5. Generate and analyse related data for improving health outcomes and Evidence based clinical practices.

Specifics of the Program:

Family adoption program is recommended as a part of curriculum of Community Medicine and should begin from 1st professional year with competencies being spread in ascending manner for entire MBBS training program. The orientation towards the same may be a part of Foundation course under the theme of 'Field visit to community health centre' (8 hrs) which is already allocated to foundation course as per GMER 2019.

The family adoption shall preferably include villages not covered under PHCs adopted by medical college. If transit time from college to site is more than 2 hours, then bastis / jhuggis/ towns on outskirts of cities may be considered for family adoption. Medical students may be divided into teams and each team may be allocated visits, with 5 families per student. These families may be introduced during their first visit; however, the model may be flexible depending upon the number of students and available families for adoption. The entire team should work under a mentor teacher for entire part of the training program.

Other considerations:

Every college may arrange one diagnostic medical camp in the village wherein identification of: anemia, malnutrition in children, hypertension, diabetes mellitus, ischemic heart diseases, kidney diseases, any other local problems may be addressed.

If required, patients shall be admitted in the hospital for acute illness under care of student, charges may be waived off or provide concession or govt. schemes.

For chronic illness, students shall be involved.

Subsidized treatment charges may be provided under govt. schemes or welfare schemes.

Camps may be arranged by Dean and Community Medicine/ P.S.M. department with active involvement of Associate/ Asst. Professors, social worker and supporting staff. Local population may be involved with village leaders.

Visit by students be made to the visit as mentioned in table below. Annual follow up diagnostic camp can be continued by the PSM department. As a step towards environment consciousness, students may be encouraged for tree plantation/medicinal plants around beginning of monsoons, in the environs of the families adopted. This could be also included in the environs of the hostels/ residence of students wherever possible.

At the end of the programme, students may be envisioned to become leaders for the community.

TARGETS TO BE ACHIEVED BY STUDENTS:

First Professional Year:

-Learning communication skills and inspire confidence amongst families

-Understand the dynamics of rural set-up of that region

- Screening programs and education about ongoing government sponsored health related programs

- Learn to analyse the data collected from their families

-Identify diseases/ ill-health/ malnutrition of allotted families and try to improve the standards

2nd Professional Year

- Inspire active participation of community through families allotted
- Continue active involvement to become the first doctor /reference point of the family by continued active interaction
- Start compiling the outcome targets achieved

3rd Professional Year

- Analysis of their involvement and impact on existing socio-politico-economic dynamics in addition to improvement in health conditions

-Final visit in the last months in advance to examination schedule, to have last round of active interaction with families

-prepare a report to be submitted to department addressing:

1) Improvement in general health
2) Immunization
3) Sanitation
4) De-addiction
5) Improvement in anemia, tuberculosis control
6) Sanitation awareness
7) Any other issues
8) Role of the student in supporting family during illness/ medical emergency
9) Social responsibility in the form of environment protection programme in form of plantation drive (medicinal plants/trees), cleanliness and sanitation drives with the initiative of the medical student

Professional Year	Competency The student should be able to	Objectives	Suggested Teaching Learning methods	Suggested Assessment methods	Teaching Hours
1st Professional	• Collect demographic profile of allotted families, take history and conduct clinical examination of all family members	By the end of this visit, students should be able to compile the basic demographic profile of allocated family members	Family survey, Community clinics Community clinics, Multispecialty camps	Community case presentation, OSPE, logbook, journal of visit	6 hrs
	• Organize health check-up and coordinate treatment of adopted family under overall guidance of mentor	By the end of this visit, students should be able to report the basic health profile and treatment history of allocated family members	Reporting of follow up visits, PRA techniques (transact walk, group discussion) Community clinics,	Community case presentation, OSPE, logbook, journal of visit	9 hrs
	• Maintain communication & follow up of remedial measures	By the end of this visit, students should be able to provide details of communication maintained with family members for follow-up of treatment and suggested remedial measures	Participation in and Process documentation of activities (NSS activities) along with reporting of photographic evidences	Community case presentation, OSPE, logbook based certification of competency, journal of visit	6 hrs
	• Take part in environment protection and sustenance activities.	By the end of this visit, students should be able to report the activities undertaken for environment protection and sustenance			6hrs

		like study of environment of families, tree plantation/ herbal plantation activities conducted in the village		logbook based certification of competency, journal of visit	(Total 27 hrs, 9 visits)
2nd Professional	• Take history and conduct clinical examination of all family members	By the end of this visit, students should be able to compile the updated medical history of family members and report their vitals and anthropometry	Family survey, Community clinics	Community case presentation, OSPE, logbook, journal of visit	6 hrs
	• Organize health check-up and coordinate treatment of adopted family under overall guidance of mentor	By the end of this visit, students should be able to report the details of clinical examination like Hb %, blood group, urine routine and blood sugar along with treatment history of allocated family members	Community clinics, Multispecialty camps	Community case presentation, OSPE, logbook, journal of visit	9 hrs
	• Maintain communication & follow up of remedial measures	By the end of this visit, students should be able to provide details of communication maintained with family members for follow-up of treatment, and suggested remedial	Reporting of follow up visits, PRA techniques (transact walk, group discussion) Community clinics,	Community case presentation, OSPE, logbook based certification of competency,	9 hrs

	• Take part in environment protection and sustenance activities.	measures along with details of vaccination drive By the end of this visit, students should be able to report the activities undertaken for environment protection and sustenancelike study of environment of families, tree plantation/ herbal plantation activities conducted in the village	Participation in and Process documentation of activities (NSS activities) along with reporting of photographic evidences	journal of visit logbook based certification of competency, journal of visit	6 hrs (Total 30 hrs, 6 visits)
3rd Professional	• Final counselling of the family members of allotted families and analyze the health trajectory of adopted family under overall guidance of mentor	By the end of this visit, students should be able to update the medical history of family members and their vitals and anthropometry By the end of this visit, students should be able to report the details of clinical examination like Hb %, blood group, urine routine and blood sugar along with treatment history of allocated family members	Family survey, Community clinics Community clinics, Multispecialty camps	Community case presentation, OSPE, logbook, journal of visit Community case presentation, OSPE, logbook, journal of visit	3hrs 4 hrs

		By the end of this visit, students should be able to provide details of communication maintained with family members for follow-up of treatment, and suggested remedial measures along with details of vaccination drive - By the end of this visit, students should be able to report the activities undertaken for environment protection and sustenance like study of environment of families, tree plantation/ herbal plantation activities conducted in the village By the last visit, students should be able to analyze and report the health trajectory of adopted family along with remedial measures adopted at individual, family and community level	Reporting of follow up visits, PRA techniques (transact walk, group discussion) Community clinics, Participation in and Process documentation of activities (NSS activities) along with reporting of photographic evidences - Small group discussion (report of the health trajectory of adopted family)	Community case presentation, OSPE, logbook based certification of competency, journal of visit logbook based certification of competency, journal of visit -Logbook based certification of competency, journal of visit	4 hrs 4 hrs 4 hrs +6 hrs in last visit (total 21 hrs, 5 visits)

TOTAL	1st Prof 2nd Prof 3rd Prof	9 visits 6 visits 5 visits **20 visits**	27 hrs 30 hrs 16 hrs +5 hours in last visit **78 hrs**		

PROTO-TYPE LOG BOOK FOR FAMILY ADOPTION

COLLEGE NAME, UNIVERSITY

ADDRESS DETAILS

NAME OF THE STUDENT:

ROLL NO.:

VILLAGE NAME:

TEHSIL/ DISTRICT:

STATE/ UNION TERITORY:

NAME OF THE MENTOR:

MENTOR STATUS: Asst. Prof/ S.R. And Details: (If changed, details of subsequent mentors)

NAME OF ASHA WORKER:

ADDRESS OF ASHA WORKER:

EXPERIENCE (SINCE HOW MANY YEARS IS HE/ SHE EMPLOYED)

(SEPARATE PAGE FOR EACH FAMILY BE MAINTAINED)

-FAMILY NAME AND ADDRESS

- Approximate size of living space of house-hold
- Malaria/ flu/ etc pertinent to the region
    - If there is any illness or medical emergency required by the house-hold, the student should take initiative in being the primarycontact for the family.
    - The student in turn should consult his/her mentor for further management of the patient.
    - The hospital to which the college is attached must provide treatment facilities to the patient.
    - Government schemes may be utilized for optimal management.
    - Follow-up records must be maintained by the student. These must be periodically evaluated by mentors with the help of senior residents.
    - The entire data sheet may be prepared by every student and submitted latest by the end of the last visit for evaluation.
    - Progress notes must include every demographic point and history recorded.

PROTO TYPE LOG BOOK

NAME	AADHAAR NO.	BIRTH DATE	AGE	POSITION IN FAMILY	DIETARY HABITS, DIET	LITERACY: EDUCATIONAL QUALIFICATION	EMPLOYMENT	NAME OF SCHOOL OF CHILD	ADDICTIONS IF ANY	HEIGHT (CMS)	WEIGHT (KG)
				(eg. Head, wife, sibling order, grand mother, etc)		annual progress of children to be recorded	for income source, eg. Labourer/ land owner/ teacher, etc	grade/ standard, medium of learning			

1ST PROF/ MBBS

SR. NO.	DATE OF VISIT
1	
2	

2ND MBBS

1	
2	

FINAL-1ST PROF-FINAL MBBS-1ST

1	
2	

PROTO TYPE LOG B

	IMMUNIZATION STATUS	PULSE	BP	R.R.	BLD GP, Rh	HEMOGLOBIN	URINE PROTEIN	URINE SUGAR	ANY POS.FINDING IN URINE	BLOOD SUGAR	IMMUNIZATION STATUS	ORAL CHECK-UP	**HYGEINE STATUS**
1ST PROF/ MBBS													
SR. NO. DATE OF VISIT													
1													
2													
2ND MBBS													
1													
2													
FINAL-1ST PROF-FINAL MBBS-1ST													
1													
2													

BRIEF TRANSLITERATION OF MAHARSHI CHARAK SHAPATH

- During the period of study I shall live a disciplined life with my teachers and peers. My action shall be guarded, service oriented and free from indiscipline and envy. In my dealings I shall be patient, obedient, humble, constantly contemplative and calm. I shall aim my full efforts and ability towards the desired goal of my profession.
- As a Physician, I shall always use my knowledge for welfare of mankind.
- I shall always be ready to serve patients, even if I am extremely busy and tired. I shall not harm any patient for the sake of monetary or selfish gains, nor shall I entertain a desire for lust, greed or wealth. Immorality shall not emerge even in my thoughts.
- My dressing shall be decent yet impressive and inspiring confidence. My conduct shall always be appropriate, pleasant, truthful, beneficial and polite. I shall use my experience in actions appropriate for that time and place.
- I shall constantly endeavor to accomplish/ keep updated with the latest developments in the field and widen my knowledge.
- I shall treat patient of gender other than mine in presence of relatives or attendants.
- When examining a patient, my discretion, attention and senses shall be concentrated on the cure of the disease. I shall not divulge the confidentiality related to the patient or family inappropriately.
- Although an authority (in my subject), I shall not display my knowledge and skill with arrogance.

MGMIHS, Navi Mumbai

Alignment Integration topics Module

Common list of AITo
of
Department of Anatomy / Physiology / Biochemistry

(as per CBME syllabus)

Annexure No. 4

MGMIHS, Navi Mumbai

DEPT.OF ANATOMY

Common List of Alignment and integration topics

Sr. No.	Compe-tency No.	Competency	Teaching & Learning Method	No. of Hrs.	Vertical Integration with	Horizontal Integration with
1	AN 61.3	Describe anatomical basis and effects of Benedikt's and Weber's syndrome	Lecture,	2	Gen Medicine	
2	AN 62.6	Describe and identify formation, branches and major areas of distribution of circle of Willis	Practical, Lecture, small group discussion, DOAP session	3	Gen. medicine	
3	AN 62.2	Describe and demonstrate surfaces, sulci, gyri, poles and functional areas of cerebral hemisphere	Practical, Lecture, small group discussion, DOAP session	4	Gen. Medicine	
4	AN 62.3	Describe the white matter of cerebrum	Lecture,	3	Gen. Medicine	
5	AN36.5	Describe the clinical significance of Killian's dehiscence	Lecture,	3	ENT	
6	AN37.1 , 37.2, 37.3	Describe and demonstrate features of nasal septum, lateral wall of nose and their blood supply and nerve supply Describe location and functional anatomy of paranasal sinuses Describe anatomical basis of sinusitis and maxillary sinus tumors.	Practical, Lecture, small group discussion, DOAP session	5	ENT	
7	AN 74.1, 74.2, 74.3, 74.4	Describe the various modes of inheritance with examples Draw pedigree charts for the various types of inheritance and give examples of diseases of each mode of inheritances Describe multifactorial inheritance with examples Describe the genetic basis and clinical features of Achondroplasia, Cystic fibrosis,	Lecture	8	Gen. Medicine	

		Vitamin D resistance rickets, Haemophilia, Dushene's muscular dystrophy and sickle cell anaemia				
8	AN 75.1	Describe the structural and numerical chromosomal aberrations	Lecture,	3	Pediatrics	
9	AN 38.1, 38.2, 38.3	Describe the morphology, identify structure of the wall, nerve supply, blood supply and actions of intrinsic and extrinsic muscle of larynx.	Practical, Lecture, small group discussion, DOAP session	4	ENT	
10	AN 75.3	Describe the genetic basis and clinical features of Prader Will syndrome, Edward syndrome and Patau syndrome	Lecture	1	Pediatrics	
11	AN 40.1, 40.2,40. 3	Describe and identify the parts, blood supply and nerve supply of external ear. Describe and demonstrate the boundaries, contents, relations and functional anatomy of middle ear and auditory tube. Describe the features of internal ear	Practical, Lecture, small group discussion, DOAP session	4	ENT	
12	AN 40.4, 40.5	Explain anatomical basis of otitis externa and otitis media Explain anatomical basis of myringotomy	Lecture,	1	ENT	
13	AN 35.5, 35.9	Describe and demonstrate extent, drainage and applied anatomy of cervical lymph nodes Describe clinical features of compression of subclavian artery and lower trunk of brachial plexus by cervical rib	Practical, Lecture, small group discussion, DOAP session	4	Gen Surgery	
14	AN 31.3	Describe anatomical basis of Horner's syndrome	Practical,	1	Ophthalmology	
15	AN 64.3	Describe various types of open neural tube defects with its embryological basis	Lecture,	3	OBGY and Pediatrics	
16	AN 29.3	Explain anatomical basis of wry neck	Lecture,	1	General Surgery	
17	AN 27.1	Describe anatomical basis of congenital hydrocephalus	Lecture, practical	3	Pediatrics	
18	AN 39.2	Explain the anatomical basis of hypoglossal nerve	Lecture,	1	ENT	
19	AN 60.3	Describe anatomical basis of cerebellar dysfunction	Lecture,	3	Gen Medicine	Physiology
20	AN 36.1, 36.2,	Describe the morphology, relations, blood supply and applied	Lecture,	6	ENT	

	36.3, 36.4	anatomy of palatine tonsil and composition of soft palate. Describe the components and functions of Waldeyer's lymphatic ring. Describe the boundaries and clinical significance of pyriform fossa Describe the anatomical basis of tonsillitis, tonsillectomy, adenoids and peritonsillar abscess				
21	AN 33.2	Describe and demonstrate attachments, direction of fibres, nerve supply and actions of muscles of mastication	Practical, Lecture, small group discussion, DOAP session	3	Gen. Surgery	
22	AN 52.5	Describe the development and congenital anomalies of diaphragm	Lecture,	2	General Surgery	
23	AN 33.4, 33.5	Explain the clinical significance of pterygoid venous plexus Describe the features of dislocation of temporomandibular joint	Lecture,	2	Gen. Surgery	--------
24	AN 28.9, 28.10	Describe and demonstrate the parts, boarders, surfaces, contents, relations and nerve supply of parotid gland with course of its duct and surgical importance. Explain the anatomical basis of Fre s syndrome	Practical, Lecture, small group discussion, DOAP session	3	General Surgery	
25	AN 25.4, 25.5	Formation and folding of heart tube, Inter atrial septum, Inter ventricular septum and TA with anomalies	Lecture, small group discussion,	8	Gen. Medicine and pediatrics	
26	AN 19.6, 19.7	Anatomical basis of flat foot and club foot Metatarsalgia and plantar fasciitis.	Lecture,	2	Orthopaedics	--------
27	AN 19.3, 19.4	Concept of peripheral heart Explain anatomical basis of rupture of tendoachilles	Lecture,	2	Gen Surgery Orthopaedics	
28	AN 20.6	Identify bones and joints of lower extremity in x ray with AP and Lateral veiw	Lecture, small group discussion, DOAP session	3	Radio diagnosis	
29	AN 27.1	Describe layers of scalp, its blood supply, nerve supply and surgical importance	Practical, Lecture	3	General surgery	

30	AN 35.2, 35.5	Describe location, parts, borders, surfaces, relations and blood supply of thyroid. Describe extent, drainage and applied anatomy of cervical lymph nodes	Practical, Lecture, small group discussion, DOAP session	7	General Surgery	
31	AN 28.8	Explain surgical importance of deep facial vein	Lecture	1	Gen Surgery	
32	AN 34.1, 43.5	Describe morphology relations and nerve supply of submandibular salivary gland and submandibular ganglion. Testing muscle of facial expression	Practical, Lecture, small group discussion, DOAP session	5	General Surgery	
33	AN56.1 , 56.2	Describe and identify various layers of meninges and its extent and modification. Describe circulation of CSF with its clinical importance	Practical, Lecture, small group discussion, DOAP session	4	Gen. Medicine	
34	AN 25.3	Describe foetal circulation and changes occurring at birth	Lecture, small group disussion	3	Gen. Medicine	
35	AN 30.1, 30.2	Describe cranial fossa and identify related structure Describe and identify major foramina With structures passing through it and its clinical relevance.	Practical, Lecture, small group discussion, DOAP session	3	General Surgery	
36	AN 57.4	Enumerate ascending and descending tracts at mid thoracic level of spinal cord	Lecture	6	Gen. Medicine	
37	AN 35.8	Describe anatomically relevant clinical features of thyroid swelling	Lecture,	3	General Surgery	
38	AN 29.3	Explain anatomical basis Of wry neck	Lecture,	1	General Surgery	
39	AN 30.5	Explain effects of pituitary turnour on visual pathway	Lecture,	2	Ophthalmol ogy	
40	AN 54.1, 54.2	Describe and identify features of plain X ray abdomen Describe and identify the special radiographs of abdominopelvic region (Contrast X ray: Barium swallow, meal, enema, cholecystography, IVP and HSG)	Lecture, DOAP session	4	Radiodiagn osis	
41	AN 55.1, 55.2	Demonstrate the surface marking of regions and planes of abdomen, superficial inguinal ring, deep ring, McBurnry's point, renal angle and	Practical, Lecture, small group discussion,	2	Gen. surgery	--------

		Mur h's oint	DOAP session			
42	AN 52.7	Describe the development of urinary system	Lecture,	5	Gen Surgery	
43	AN 78.5, 80.4	Describe and demonstrate the superficial and deep perineal pouch Describe and identify perineal body	Lecture,	3	OBGY	
44	AN 54.3	Describe ERCP, CT abdomen, MRI, arteriography in radio diagnosis of abdomen	Lecture,	3	Radiodiagnosis	
45	AN 48.7	Mention the lobes involved in benign prostatic hypertrophy and prostatic cancer	Lecture,	1	General Surgery	
46	AN 47.5, 48.8	Describe and demonstrate Rectum and anal canal Mention the structures palpable during vaginal and rectal examination	Practical, Lecture, small group discussion, DOAP session	3	Gen Surgery and OBGY	Physiology
47	AN 15.3, 15.4	Describe and demonstrate boundaries, floor, roof and contents of femoral triangle Explain anatomical basis of psoas abscess and femoral hernia	Practical, Lecture, small group discussion, DOAP session	3	General Surgery	
48	AN52.8	Describe the development of male and female reproductive system	Lecture,	10	OBGY	
49	AN 16.3	Explain the anatomical basis of Trendelenburg sign	Lecture, DOAP session	2	General Surgery	
50	AN 17.2	Describe anatomical basis of complications of fracture neck of femur	Lecture,	3	Orthopedics	
51	AN 16.2	Describe anatomical basis of sciatic nerve injury during gluteal intramuscular injections	Lecture,	1	General Surgery	
52	AN 18.3	Explain anatomical basis of foot drop	Lecture	1	General Surgery	
53	AN 18.6	Describe knee injury with its applied anatomy	Lecture, DOAP session	3	General Surgery	
54	AN 70.2	Identify the lymphoid tissue under microscope and describing microanatomy of thymus and spleen	Lecture, Practical	1	Pathology	--------
55	AN 79.4	Describe the development of somites and intra embryonic coelom	lecture	1	OBGY	--------
56	AN 47.1—47.4	Describe and identify boundaries and recesses of lesser and grater sac. Name and identify various	Written/ Viva voce/ skill	1	Gen Surgery	

		peritoneal folds and pounches with its explanation. Explain anatomical basis of ascites and peritonitis Explain anatomical basis of subphrenic abscess	assessment			
57	AN 78.5, 80.4	Describe in brief abortion, decidual reaction and pregnancy test and PCPNDT Describe embryological basis of twinning in monozygotic and dizygotic twins	Lecture,	1	OBGY	
58	AN 47.5, 47.6	Describe & demonstrate major viscera of abdomen under following headings (anatomical position, external and internal features, important peritoneal and other relations, blood supply, nerve supply, lymphatic drainage & applied aspects). Explain the anatomical basis of, Liver biopsy (site of needle puncture), Referred pain in cholecystitis, Obstructive jaundice, Referred pain around umbilicus.	Practical, Lecture, small group discussion, DOAP session	1	General Surgery	
59	AN 47.5, 47.6, 47.7	Describe & demonstrate major viscera of abdomen under following headings (anatomical position, external and internal features, important peritoneal and other relations, blood supply, nerve supply, lymphatic drainage & applied aspects). Explain the anatomical basis of Splenic notch, Accessory spleens, kehr's sign. Mention the clinical importance of Calot's triangle	Practical, Lecture, small group discussion, DOAP session	6	General Surgery	
60	AN 69.2	Describe the various types and structural and functional correlation of blood vessels	Lecture, Practical	2		Physiology
61	AN 47.5, 47.6	Describe & demonstrate major viscera of abdomen under following headings (anatomical position, external and internal features, important peritoneal and other relations, blood supply, nerve supply, lymphatic drainage & applied aspects)	Practical, Lecture, small group discussion, DOAP session	1	General Surgery	--------

62	AN77.6, 79.5, 79.6	Describe teratogenic influences, fertility and sterility, surrogate motherhood and social significance of "sex ratio" Explain embryological basis of congenital malformation, sacrococcygeal teratomas and neural tube defects Describe the diagnosis of pregnancy in first trimester and role of teratogens, alpha fetorotein	Lecture,	1	OBGY	
63	AN 47.13	Describe the abnormal opening of thoracoabdominal diaphragm and diaphragmatic hernia	Lecture,	1	General Surgery	--------
64	AN 81.1 - 81.3	Describe various methods of prenatal diagnosis Describe indications, process and disadvantages of amniocentesis Describe indications, process and disadvantages of chorionic villus biopsy	Lecture,	1	OBGY	
65	AN 52.6	Describe the development and congenital anomalies of fortegut, midgut and hindgut	Lecture,	4	General Surgery	--------
66	47.10, 47.11	Enumerate the sites of portosystemic anastomosis Explain the anatomic basis of hematemesis and caput medusa in portal hypertension	Lecture	1	General Surgery	
67	AN 47.5, 47.6	Describe & demonstrate major viscera of abdomen under following headings (anatomical position, external and internal features, important peritoneal and other relations, blood supply, nerve supply, lymphatic drainage & applied aspects). Explain anatomical basis of radiating pain of kidney to groin	Practical, Lecture, small group discussion, DOAP session	1	General Surgery	
68	AN 49.4	Describe and demonstrate boundaries, contents and applied anatomy of ischiorectal fossa	Practical, Lecture, small group discussion, DOA? session	1	General Surgery	
69	AN 48.5, 48.6	Explain the anatomical basis of suprapubic cystostomy, urinary obstruction in benign enlargement of prostate. Describe anatomical basis of automatic bladder.	Lecture ,	2	General surgery	

70	AN25.7	Identify structure seen a plain x-ray chest (PA view)	Lecture	1	Radiodiagnosis, General Medicine	
71	AN25.8	Identify and describe in brief a barium swallow	Practical, DOAP session	1	Radiodiagnosis, General Medicine	
72	AN25.9	Demonstrate surface marking of lines pf pleural reflection, lung borders and fissure, trachea, heart borders, apex beat & surface projection of valves of heart	Practical	1	General Medicine , Pediatrics	
73	AN44.1	Describe & demonstrate the planes (transpyloric, transtubercular, subcostal, lateral vertical, Linea semilunaris), regions & Quadrants of abdomen	Practical, Lecture, small group discussion, DOAP session	2	General Surgery	
74	AN44,4	Describe & demonstrate extent, boundaries, contents of inguinal canal including Hesselbach's triangle	Practical, Lecture, small group discussion, DOAP session	1	General Surgery	
75	AN44.6 AN 44.7	Describe &demonstate attachments of mucles of anterior abdominal wall Enumerate common Abdominal incisions	Practical, Lecture, small group discussion, DOAP session	1	General Surgery	
76	AN46.1	Describe & demonstrate coverings, internal structure, side determination, blood supply, nerve supply, lymphatic drainage & descent of testis with its applied anatomy	Practical, Lecture, small group discussion, DOAP session	1	General Surgery	
77	AN47.5	Describe & demonstrate major viscera of abdomen under following headings -STOMACH (anatomical position, external and internal features, important peritoneal and other relations, blood supply, nerve supply, lymphatic drainage and applied as ects	Practical, Lecture, small group discussion, DOAP session	1	General Surgery	
78	AN46,4	Explain the anatomical basis of Varicocele	Practical, Lecture,	1	General Surgery	--------

79	AN 46.5	Explain the anatomical basis of Phimosis & Circumcision	Lecture,	1	General Surgery	
80	AN 47.1 AN 47.2	Describe & identify boundaries and recesses of Lesser & Greater sac. Name & identify various peritoneal folds & pouches with its explanation	Practical, Lecture, small group discussion, DOAP session	1	General Surgery	
81	AN 47.3 AN 47.4	Explain anatomical basis of Ascites & Peritonitis Explain anatomical basis of Subphrenic abscess	Lecture,	1	General Surgery	--------
82	AN 23.1	Describe & demonstrate the extent appearance, relations, blood supply, nerve supply, lymphatic drainage and applied anatomy of esophagus	Practical, Lecture DOAP session	1	General Surgery	--------
83	AN 23.2	Describe & demonstrate the extent relations tributaries of thoracic duct and enumerate its applied anatomy	Practical, Lecture DOAP session	1	General Surgery	--------
84	AN 23.7	Mention the extent, relations and applied anatomy of lymphatic duct	Practical, Lecture DOAP session	1	General Surgery	
85	AN 80.3A N 80.4	Describe formation of placenta, its physiological functions, fetomaternal circulation & placental barrier Describe embryological basis of twinning in monozygotic & dizygotic twins	Lecture ,	1	Obstetrics & Gynecology	
86	AN 80.7	Describe various types of umbilical cord attachments	Lecture ,	1	Obstetrics & Gynecology	
87	AN 78.3	Describe the process of implantation & common abnormal sites of implantation	Lecture ,	1	Obstetrics & Gynecology	
88	AN 70.2	Identify the lymphoid tissue under the microscope & describe microanatomy	Lecture, Practical ,	1	Pathology	--------

		of lymph node, tonsil and correlate the structure with function				
89	AN25.7	Identify structure seen a plain x-ray chest (PA view)	Lecture	1	Radiodiagnosis, General Medicine	
90	AN25.8	Identify and describe in brief a barium swallow	Practical, DOAP session	1	Radiodiagnosis, General Medicine	
91	AN25.9	Demonstrate surface marking of lines pf pleural reflection, lung borders and fissure, trachea, heart borders, apex beat & surface projection of valves of heart	Practical	1	General Medicine , Pediatrics	
92	AN44.1	Describe & demonstrate the planes (transpyloric, transtubercular, subcostal, lateral vertical, Linea semilunaris), regions & Quadrants of abdomen	Practical, Lecture, small group discussion, DOAP session	2	General Surgery	
93	AN44.4	Describe & demonstrate extent, boundaries, contents of inguinal canal including Hesselbach's triangle	Practical, Lecture, small group discussion, DOAP session	1	General Surgery	
94	AN47.5	Describe & demonstrate major viscera of abdomen under following headings — STOMACH(anatomic al position, external and internal features, important peritoneal and other relations, blood supply, nerve supply, lymphatic drainage and applied aspects	Practical, Lecture, small group discussion, DOAP session	1	General Surgery	
95	AN 70.2	Identify the lymphoid tissue under the microscope & describe microanatomy of lymph node, tonsil and correlate the structure with function	Lecture, Practical,	1	Pathology	
96	AN74.1	Describe the various modes of inheritance with examples	Lecture	1	General Medicine, Pediatrics	
97	AN12.13	Describe the anatomical basis of Wrist drop	Lecture	1	General Surgery	
98	AN 66.2	Describe ultrastructure of connective tissue	Lecture	2	Pathology	
99	AN77.3	Describe spermatogenesis and oogenesis along with diagrams	Lecture Practical,	2	Obstetrics &	

					Gynecology	
100	AN24.1	Mention the blood supply, lymphatic drainage and nerve supply of pleura, extent of pleura and describe the pleural recesses and their applied anatomy	Practical, Lecture	1	General Medicine	Physiology
101	AN 10.7	Identify side, external features and relations of structures which form root of lung & bronchial tree and their clinical correlate	Practical Lecture, small group discussion, DOAP session	1	General Medicine	Physiology
102	AN77.1	Describe the uterine changes occurring during the menstrual cycle	Lecture	1	Obstetrics & Gynecology	
103	AN 7.5	Describe principles Of sensory and motor innervation of muscles	Lecture,	1	General Medicine	Physiology
104	AN 7.6	Describe concept of loss of innervation of a muscle with its applied anatomy	Lecture,	1	General Medicine	
105	AN12.8	Describe anatomical basis of Claw hand	Lecture,	1	General Surgery	

MGMIHS, Navi Mumbai
DEPT.OF PHYSIOLOGY

Common List of Alignment and integration topics

Sr. No.	Competency No.	Competency	Teaching & Learning Method	Horizontal Integration	Vertical Integration
1	PY. 1.4	Apoptosis – Programmed cell death	Lecture + Small group discussion		Pathology
2	PY1.6	Fluid compartment of the body, its ionic composition & measurements	Lecture + Small group discussion	Biochemistry	
3	PY2.2	Discuss the origin, forms, variations and functions of plasma proteins	Lecture + Small group discussion	Biochemistry	
4	PY2.3	Describe and discuss the synthesis and functions of Hemoglobin and explain its breakdown. Describe variants of hemoglobin	Lecture + Small group discussion	Biochemistry	
5	PY2.5	Describe different types of anaemias& Jaundice	Lecture + Small group discussion	Biochemistry	Pathology
6	PY2.8	Describe the physiological basis of hemostasis and, anticoagulants. Describe bleeding & clotting disorders (Hemophilia, purpura)	Lecture + Small group discussion		Pathology
7	PY2.9	Describe different blood groups and discuss the clinical importance of blood grouping, blood banking and transfusion	Lecture + Small group discussion		Pathology

8	PY.2.12	Blood Indices	Lecture, Small Group discussion		General Medicine
9	PY 2.11	Blood Group Estimation	DOAP sessions		Pathology
10	PY 2.11	Total Leukocyte count	DOAP sessions		Pathology
11	PY 2.11	Estimation of bleeding time & clotting time	DOAP sessions		Pathology
12	PY2.12	Describe test for ESR	Demonstration		Pathology
13	PY 2.13	Platelet & Reticulocyte count	Demonstration sessions		Pathology
14	PY3.1	Describe the structure and functions of a neuron and neuroglia; Discuss Nerve Growth Factor & other growth factors/cytokines	Lecture, Small group discussion	Anatomy	
15	PY3.3	Describe the degeneration and regeneration in peripheral nerves	Lecture, Small group discussion		General Medicine
16	PY3.4	Describe the structure of neuro-muscular junction and transmission of impulses	Lecture, Small group discussion		Anaesthesia
17	PY3.7	Describe the different types of muscle fibers and their structure	Lecture, Small group discussion	Anatomy	
18	PY3.5/ PY3.6	Discuss the action of neuro-muscular blocking agents Describe the pathophysiology of Myasthenia gravis	Lecture, Small group discussion		Pharmacology Pathology
19	PY3.11	Explain energy source and muscle metabolism	Lecture, Small group discussion	Biochemistry	
20	PY3.12	Explain the gradation of muscular activity	Lecture, Small group discussion		General Medicine

21	PY3.13	Describe muscular dystrophy: myopathies	Lecture Small group discussion	Anatomy	General medicine
22	PY4.1	Describe the structure and functions of digestive system	Lecture Small group discussion	Anatomy	
23	PY4.2	Describe the composition, mechanism of secretion, functions, and regulation of saliva, gastric, pancreatic, intestinal juices and bile secretion	Lecture Small group discussion	Biochemistry	
24	PY4.4	Describe the physiology of digestion and absorption of nutrients	Lecture Small group discussion	Biochemistry	
25	PY4.7	Describe & discuss the structure and functions of liver and gall bladder	Lecture Small group discussion	Biochemistry	
26	PY4.8	Describe & discuss gastric function tests, pancreatic exocrine function tests & liver function tests	Lecture Small group discussion	Biochemistry	
27	PY4.9	Discuss the physiology aspects of: peptic ulcer, gastro- oesophageal reflux disease, vomiting, diarrhoea, constipation, Adynamic ileus, Hirschsprung's disease	Lecture Small group discussion	Biochemistry	
28	PY5.1	Describe the functional anatomy of heart including chambers, sounds; and Pacemaker tissue and conducting system.	Lecture, Small group discussion	Anatomy	
29	PY5.5	Describe the physiology of E.C.G, its applications and	Lecture, Small group discussion		General medicine

		the cardiac axis			
30	PY5.6	Describe abnormal ECG, arrhythmias, heart block and myocardial Infarction	Lecture, Small group discussion	Anatomy	
31	PY5.6	Describe abnormal ECG, arrhythmias, heart block and myocardial Infarction	Lecture, Small group discussion		General medicine
32	PY 5.10	Regional circulation including microcirculation, lymphatic, coronary, cerebral, capillary, Skin, pulmonary and splanchnic circulation	Lecture, Small group discussion		General Medicine
33	PY5.12	Clinical examination of pulse	DOAP		General Medicine
34	PY5.13	Record and interpret normal ECG in a volunteer or simulated environment	DOAP		General Medicine
35	PY5.16	Recording Arterial pulse tracing using finger plethysmography in a volunteer or simulated environment	DOAP		General Medicine
36	PY 6.8	Technique to perform & interpret Spirometry	DOAP		Respiratory Medicine
37	PY7.7	Describe artificial kidney, dialysis and renal transplantation	Lecture		General Medicine
38		Describe & discuss		Biochemistry	

	PY 7.8	Renal Function Tests			
39	PY8.4	Describe function tests: Thyroid gland; Adrenal cortex, Adrenal medulla and pancreas	Lecture, Small group discussion	Biochemistry	
40	PY 9.1	Describe and discuss sex determination; sex differentiation and their abnormities and outline psychiatry and practical implication of sex determination.	Lecture, Small group discussion	Anatomy	
41	PY9.6	Enumerate the contraceptive methods for male and female. Discuss their advantages & disadvantages	Lecture, small group discussion		Obstetrics & Gynaecology, Community Medicine
42	PY9.8	Describe and discuss the physiology of pregnancy, parturition & lactation and outline the psychology and psychiatry-disorders associated with it.	Lecture, small group discussion		Obstetrics & Gynaecology, Community Medicine
43	PY9.10	Discuss the physiological basis of various pregnancy tests	Lecture, small group discussion		Obstetrics & Gynaecology, Community Medicine
44	PY9.11	Discuss the hormonal changes and their effects during peri-menopause and menopause	Lecture, small group discussion		Obstetrics & Gynaecology, Community Medicine
45	PY9.12	Discuss the common causes of infertility in a couple and role of IVF in managing a case of infertility.	Lecture, small group discussion		Obstetrics & Gynaecology, Community Medicine
46	PY10.1	Describe and discuss the organization of nervous system		Anatomy	
47				Anatomy	

	PY10.2	Describe and discuss the functions and properties of synapse, reflex, receptors			
48	PY10.3	Describe and discuss somatic sensations & sensory tracts		Anatomy	
49	PY10.4	Describe and discuss motor tracts, mechanism of maintenance of tone, control of body movements, posture and equilibrium & vestibular apparatus		Anatomy	
50	PY10.5	Describe and discuss structure and functions of reticular activating system, autonomic nervous system (ANS)	Lecture, Small group discussion	Anatomy	
51	PY10.6	Describe and discuss Spinal cord, its functions, lesion & sensory disturbances.	Lecture, Small group discussion	Anatomy	
52	PY10.7	Describe and discuss functions of cerebral cortex, basal ganglia, thalamus, hypothalamus, cerebellum and limbic system and their abnormalities.	Lecture, Small group discussion	Anatomy	
53	PY10.7	Describe and discuss functions of cerebral cortex, basal ganglia, thalamus, hypothalamus, cerebellum and limbic system and their abnormalities	Lecture, Small group discussion		Psychiatry
54	PY10.8	Describe and discuss behavioral and EEG characteristics during	Lecture, Small group discussion		Psychiatry

		sleep and mechanism responsible for its production			
55	PY10.11	Demonstrate the correct clinical examination of the nervous system: Higher functions, sensory system, motor system, reflexes, cranial nerves in a normal volunteer or simulated environment	DOAP	Anatomy	
56	PY10.12	Identify normal EEG forms	Lecture, Small group discussion		Psychiatry
57	PY10.13	Describe and discuss perception of smell and taste sensation	Lecture, Small group discussion		ENT
58	PY10.14	Describe and discuss patho-physiology of altered smell and taste sensation	Lecture, Small group discussion		ENT
59	PY10.15	Describe and discuss functional anatomy of ear and auditory pathways & physiology of hearing	Lecture, Small group discussion		ENT
60	PY10.16	Describe and discuss pathophysiology of deafness. Describe hearing tests	Lecture, Small group discussion		ENT
61	PY10.17	Describe and discuss functional anatomy of eye, physiology of image formation, physiology of vision including colorvision, refractive errors, color blindness, physiology of pupil and light reflex	Lecture, Small group discussion		Ophthalmology
62	PY10.18	Describe and discuss the physiological basis of lesion in visual pathway	Lecture, Small group discussion		Ophthalmology

63	PY10.19	Describe and discuss auditory & visual evoke potentials	Lecture, Small group discussion		ENT , Ophthalmology
64	PY.11.6	Physiology of Infancy	Lecture, Small group discussion		Pediatrics
65	PY.11.9	Interpret growth chart	Lecture, Small group discussion		Pediatrics
66	PY.11.10	Interpret anthropometric assessment of infants	Lecture, Small group discussion		Pediatrics

MGMIHS, Navi Mumbai
DEPT.OF BIOCHEMISTRY

Common List of Alignment and integration topics

Sr. No.	Competency No.	Competency	Teaching & Learning Method	No. of Hrs. requirement	Vertical Integration with following subject	Horizontal Integration with following subject
01	BI 6.1	Metabolism in Fed and Fasting Stage	Lecture	01	General Medicine	--------
02	BI 6.3	Metabolism of Nucleic acid	Lecture	01	--------	Physiology
03	BI 6.4	Metabolism of Nucleic acid	Lecture	01	General Medicine	--------
04	BI 6.9	Mineral metabolism- Calcium, Phosphorus, Sodium , Potassium	Lecture	01	General Medicine	Physiology
05	BI 6.10	Mineral metabolism- Calcium, Phosphorus, Sodium , Potassium, copper, zinc, selenium	Lecture	01	General Medicine	----------
06	BI 7.7	Role of free radicals in diseases	Lecture	01	General Medicine, Pathology	----------
07	BI 8.1	Nutrition	Lecture	01	Pathology, General Medicine, Pediatrics	----------
08	BI 8.4	Nutrition	Lecture	01	Pathology, General Medicine	----------
09	BI 8.5	Nutrition	Lecture	01	Community Medicine, General Medicine,Pediatrics	----------

10	BI 6.9	Estimation of Serum Phosphorus	SGT	04	General Medicine	Physiology
11	BI 11.17	Estimation of Serum Uric acid	SGT	04	General Medicine, Pathology	--------
12	BI 11.23	Calculate Energy content of food Items & glycemic Index	SGT	02	General Medicine	-------
13	BI 11.24	Calculate Energy content of food Items & glycemic Index	SGT	02	General Medicine	-------
14	BI 5.4	Tryptophan, Glycine, Sulphur containing amino acids Metabolism disorders Urea cycle disorders	Lecture	04	Pediatrics	-----
15	BI 6.7	ECE: Dehydration Water, electrolyte balance and imbalance	Lecture	01	General Medicine	Physiology
16	BI 6.13	ECE: Kidney diseases KFT	Lecture	01	Pathology, General Medicine	Physiology, Human Anatomy
17	BI 6.14	ECE: Kidney diseases, Jaundice KFT, LFT	Lecture	02	Pathology, General Medicine	Physiology, Human Anatomy
18	BI 3.9	Ketone Body Metabolism	Lecture	01	General Medicine	-----
19	BI 4.1	Phospholipid and Eicosanoids	Lecture	01	General Medicine	-----
20	BI 4.2	Fatty acid Synthesis, Fatty acid oxidation, Lipid storage disorders	Lecture	02	General Medicine	-----

21	BI 4.3	Lipoprotein metabolism,Cholesterol Metabolism, Fatty Liver Atherosclerosis	Lecture	03	General Medicine	-----
22	BI 4.6	Phospholipid and Eicosanoids	Lecture	01	General Medicine	-----
23	BI 11.17	Ketone Body Metabolism, Cardiac Biomarkers	Lecture	02	Pathology, General Medicine	-----
24	BI 5.3	Digestion and absorption of proteins, Transamination, Deamination, Fate of ammonia.	Lecture	02	Pediatrics	-----
25	BI 5.4	Phenylalanine and tyrosine metabolism and disorders	Lecture	01	Pediatrics	-----
26	BI 6.5	Vitamin A	Lecture	01	General Medicine	--------
27	BI 7.3	Genetic code, Gene Mutation, Translation	Lecture	01	Pediatrics	--------
28	BI 7.4	RDT, PCR	Lecture	02	General Medicine, Pediatrics	--------
29	BI 8.4	Obesity	Lecture	01	General Medicine, Pathology	--------
30	BI 9.2	Extra cellular matrix	Lecture	01	General Medicine	----------
31	BI 10.1	Biochemical basis of cancer	Lecture	01	Obstetrics &Gynaecology, General Surgery, Pathology	----------

32	BI 10.2	Tumour markers	Lecture	01	Obstetrics &Gynaecology, General Surgery, Pathology	----------
33	BI 10.3	Cell mediated immunity, Humoral immunity	Lecture	01	Obstetrics &Gynaecology, General Surgery, Pathology	----------
34	BI 10.4	Cell mediated immunity, Humoral immunity	Lecture	01	General Medicine, Pathology	Physiology
35	BI 10.5	Antigen, Vaccine development	Lecture	01	Pathology, Pediatrics, Microbiology	---------
36	BI 6.5	Vitamin D	Lecture	01	General Medicine	--------
37	BI 6.9	Minerals: Calcium, Phosphorus, Iodine, Copper	Lecture	01	General Medicine	Physiology
38	BI 6.10	Minerals: Calcium, Phosphorus, Iodine, Copper	Lecture	01	General Medicine	--------
39	BI 6.13	TFT	Lecture	01	Pathology, General Medicine	Physiology, Human Anatomy
40	BI 6.14	TFT, Adrenal FT	Lecture	01	Pathology, General Medicine	Physiology, Human Anatomy
41	BI 6.15	TFT, Adrenal FT	Lecture	01	Pathology, General Medicine	Physiology, Human Anatomy
42	BI 7.3	Regulation of gene expression	Lecture	01	Pediatrics	--------

43	BI 11.22	Calculate AG ratio and creatinine clearance	SGT	04	General Medicine	-------
44	BI 3.4	Glycolysis and PDH complex, Glycogen metabolism, Gluconeogenesis, Fructose and Galactose metabolism, Uronic acid pathway, HMP shunt, G6PD deficiency case	Lecture	05	General Medicine	-----
45	BI 3.7	Glycolysis and PDH complex, Glycogen metabolism, Gluconeogenesis, Fructose and Galactose metabolism, Uronic acid pathway, HMP shunt, G6PD deficiency case	Lecture	05	-------	Physiology
46	BI 3.8	Glycolysis and PDH complex, Glycogen metabolism, Gluconeogenesis, Fructose and Galactose metabolism, Uronic acid pathway, HMP shunt, G6PD deficiency case	Lecture	05	Pathology, General Medicine	-----

47	BI 3.9	Blood glucose regulation, Diabetes mellitus	Lecture	01	General Medicine	-----
48	BI 11.17	Blood glucose regulation, Diabetes mellitus Dyslipidemia Myocardial Infarction	Lecture/SGD	05	Pathology, General Medicine	-----
49	BI 4.2	Malabsorption syndrome, Digestion and absorption of lipids	Lecture	01	General Medicine	-----
50	BI 3.10	GTT chart	SGD/ LCD	02	General Medicine	-----
51	BI 6.5	Vit. K, Vit E, Vit C,Thiamine, Riboflavin, Niacin, Pantothenic acid, Pyridoxine, Biotin	Lecture	04	General Medicine	-----
52	BI 2.4	Enzyme Inhibition	Lecture	01	Pathology, General Medicine	-----
53	BI 2.5, BI 11.17	Enzyme pattern in pathological conditions	Lecture	01	Pathology, General Medicine	-----
54	BI 2.6	Enzyme based Assays	Lecture	01	Pathology, General Medicine	-----
55	BI 10.3	Immunoglobulin Biochemistry chart	SGT	02	Obgy&GyneGen.Surgeny Pathology	-----

56	BI 10.3	Immunoglobulins and Electrophoresis	Lecture	01	OBGY and GYNE Gen.Surgeny Pathology	----
57	BI 10.4	Immune response	Lecture	01	Gen.Medicine Pathology	Physiology
58	BI 10.5	Vaccines	Lecture		Pathology Pediatrics Microbiology	----
59	BI 6.5	Vit K, Thiamin, Riboflavin ,Niacin	Lecture	01	General Medicine	----
60	BI 5.2 ,6.12.	Abnormal and Normal Hemoglobin	Lecture	02	Pathology, GeneralMedicine	Physiology
61	BI 6.5	Vit. B12, folic acid	Lecture	01	General Medicine	-----
62	BI 6.9, BI 6.10	Iron Metabolism Iron Metabolism	Lecture Lecture	01	General Medicine General Medicine	Physiology -------
63	BI 6.11	HB Metabolism	Lecture	01	Pathology, General Medicine	Physiology
64	BI 4.1	Lipid Classification	Lecture	02	General Medicine	------
65	BI 11.4	Normal and abnormal Urine constituents	DOAP	08	General Medicine	Physiology

Resolution No. 4.15 of Academic Council (AC-50/2024): Resolved to approve and implement the alignment of topics of Phase I subjects with the permission of few changes at local institute level if required. **[ANNEXURE-35]**

- Phase I MBBS Alignment

(ANATOMY, PHYSIOLOGY, BIOCHEMISTRY)

Suggested Phase-I Alignment Table (Anatomy, Physiology & Biochemistry) (Topics written here are indicative and can be adjusted if required)			
Month	**Anatomy**	**Physiology**	**Biochemistry**
1	-General Anatomy -Lower Limb (LL)	General Physiology, Blood	Cell membrane and organelles, extracellular matrix, Chemistry of carbohydrates, amino-acid & proteins, Lab Safety and Biomedical Waste Management and Chromatography (Demo)
2	-LL/UL -General Embryology & Histology	Blood, N-M	Plasma protein, immunoglobulins, Enzymes, Hemoglobin structure and Hemoglobinopathies, Electrophoresis (Demo), Heme synthesis, Porphyria's, Hemecatabolism, iron metabolism (mineral) Bilirubin formation, Jaundice, colorimetry (Demo)
3	UL -General Embryology & Histology	ANS, CVS	Clinical Enzymology, Chemistry of lipids, and lipoprotein metabolism, carbohydrate metabolism, vitamins, Estimation of Protein and albumin
4	-Abdomen -Related Systemic Embryology & Histology	GIT, Renal	Vitamins, Nutrition, Liver Function Tests, Renal Function Tests, acid-base balance and its disorders, water and electrolyte normal and abnormal analysis of urine(DOAP), Estimation of Urea, creatinine
5	-Abdomen,Pelvis -Related Systemic Embryology & Histology	GIT (contd.), Repro.	Metabolism of proteins and their metabolic disorders, Metabolism of carbohydrates and their metabolic disorders, Diabetes mellitus, Electron transport chain and oxidative phosphorylation, Xenobiotics, Estimation of Glucose.
6	-Thorax -Related systemic Embryology & Histology	Repro (contd.), RS	Metabolism of lipids (remaining) and disorders, Metabolism of proteins, minerals, vitamins, Reproductive Hormones, Prenatal screening, new born screening.
7	H & N–I -Related Systemic Embryology & Histology, Genetics	Endocrine (Neck region), CNS	Hormone Biochemistry; Tumour markers and, Thyroid Function Tests, Adrenal Function tests, Free radicals, and antioxidants
8	H & N–II -Related Systemic Embryology & Histology, Genetics	CNS contd , Special senses	Purine and pyrimidines metabolism, gout, purine salvage pathway, replication, DNA damage and repair mechanism, transcription, translation, post-translational modifications, protein synthesis inhibitors, genetic code, and mutations, estimation of uric acid
9	- Neuroanatomy -Related Systemic Embryology & Histology	CNS (Contd.) Integrated physiology	Molecular biology techniques and Miscellaneous.

Resolution No. 5.4 of Academic Council (AC-48/2023): Resolved to approve AETCOM competencies distribution from First MBBS 2023-24 batch onwards, as per new CBME guidelines published on 01.08.2023 **[ANNEXURE-8].**

MGMIHS, Navi Mumbai

AETCOM Competencies Distribution for Anatomy, Physiology and Biochemistry from First MBBS 23-24 batch onwards

(Ref: NMC letter No. U. 1 4021 1812023-UGMEB dated 01.08.23)

Subject	Competency Number	Competency
Anatomy	Module 1.5	The cadaver as our first teacher Demonstrate respect and follow the correct procedure when handling cadavers and other biologic tissue.
	Module 1.1	Identify and discuss physician's role and responsibility to society and the community that she/ he serves
Physiology	Module 1.2, Module 1.3	Demonstrate empathy in patient encounters
	Module 1.4	Demonstrate ability to communicate to patients in a patient,respectful, nonthreatening, non- judgmental and empathetic manner
Biochemistry	Module 1.1,	Enumerate and describe the role of a physician inhealth care system
	Module 1.1	Describe and discuss the commitment to lifelong learning as an important part of physician growth.

One Brief Answer AETCOM question of 3 marks will be asked in paper 1 and paper 2 each. (Ref: NMC letter No. U. 1 4021 1812023-UGMEB dated 01.08.23)

Resolution No. 5.6 of Academic Council (AC-48/2023): Resolved to accept the final distribution of subject wise teaching hours for first professional MBBS from First MBBS 2023-24 batch onwards, as per new CBME guidelines published on 01.08.2023 **[ANNEXURE-10].**

Subject	Lecture (Hrs)	SGL (Hrs)	SDL (Hrs)	Total (Hrs)
Foundation Course (FC) will be conducted at the beginning of 1st MBBS for 01 week				**39**
Anatomy	210	400	**10**	**620**
Physiology	130	300	**10**	**440**
Biochemistry *	78	144	**10**	**232**
ECE**	27	-	**0**	**27**
Community Medicine	20	20	**-**	**40**
FAP			**27**	**27**
AETCOM ***		26		**26**
Sports + Extra –curricular activities				**10**
Formative Examination and Term examinations				**60**
Total				**1521#**
***Foundation Course (FC)** **Remaining 121 hours of FC will be** spread throughout year . Thus, FC will be total **160 hours.**	**Every Saturday**			**121**
Total				**1642#**

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Distribution of Subject Wise Teaching Hours for 1 st MBBS

(As per NMC guidelines letter No. U. 1 4021 1812023-UGMEB dared 01.08.23, page No. 69)

***Including molecular biology**

****Early Clinical exposure hours to be divided equally in all three subjects.**

***** AETCOM module shall be a longitudinal programme.**

 # includes hours for Foundation course also.

Resolution No. 5.10 of Academic Council (AC-48/2023): Resolved to accept University passing criteria as per CBME guidelines published on 01.09.2023 from First MBBS 2023-24 batch onwards (Ref F.No. U/14021/8/2023-UGMEB Corrigendum Amended Page 58 guidelines) **[ANNEXURE-18].**

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Criteria of passing in subject

(Reference No: U/14021/8/2023-UGMEB 2023)

Page 58 of CBME Guideline	Amended page 58 of CBME Guidelines
In subjects that have two papers, the learner must secure minimum 50% of Marks in aggregate (both papers together) to pass in the said subject.	**In subjects that have two papers, the learner must secure** minimum 40% of marks in aggregate (both papers together) to pass in the said subject.
Criteria for passing in a subject: A candidate shall obtain 50% marks in University conducted examination separately in Theory and in Practical (practical includes; practical/clinical and viva voce) in order to be declared as passed in that subject.	**Criteria for passing in a subject: A** candidate shall obtain 50% marks in aggregate and 60: 40 (minimum) or 40:60 (minimum) in University conducted examination separately in Theory and in Practical (practical includes; practical/clinical and viva voce) in order to be declared as passed in that subject.

COMPETENCY BASED MEDICAL EDUCATION (CBME) CURRICULUM 2024

1. (2024-25 batch Onwards)Preamble

The new Graduate Medical Education Regulations (GMER) attempt to stand on the shoulders of the contributions and the efforts of resource persons, teachers and students (past and present). It intends to prepare the learner to provide health care to the evolving needs of the nation and the world.

Following the Regulations on Graduate Medical Education (GMER) 1997, a new crisp 'avatar' in the form of GMER 2023 was placed last year. It was time to have a relook at all aspects of the various components in the existing regulations and guidelines, and adapt them to the changing demography, socio-economic context, perceptions, values, advancements in medical education and expectations of stakeholders. Emerging health care issues particularly in the context of emerging diseases, impact of advances in science and technology and shorter distances on diseases and their management also need consideration.

The thrust in the new guidelines is put on continuation and evolution of medical education based on feedback and experience of CBME in the last 5 years since its inception in 2019, making it more learner-centric, patient-centric, gender- sensitive, outcome-oriented and environment appropriate. The result is an outcome driven curriculum which conforms to global trends. Emphasis is made on alignment and integration of subjects both horizontally and vertically while respecting the strengths and necessity of subject-based instruction and assessment. This has necessitated a deviation from using "broad competencies"; instead, the reports have written end of phase subject competencies. These "competencies" can be mapped to the global competencies in the Graduate Medical Education Regulations.

The importance of ethical values, responsiveness to the needs of the patient and acquisition of communication skills is underscored by providing dedicated time in curriculum in the form of a longitudinal program titled 'AETCOM' based on Attitude, Ethics and Communication (AETCOM) competencies. Great emphasis has been placed on collaborative and inter disciplinary teamwork, professionalism, altruism and respect in professional relationships with due sensitivity to differences in thought,

socioeconomic position and gender.

2. Objectives of the Indian Graduate Medical Training Programme

The undergraduate medical education program is designed with a goal to create an "Indian Medical Graduate" (IMG) possessing requisite knowledge, skills, attitudes, values and responsiveness, so that she or he may function appropriately and effectively as a physician of first contact of the community while being globally relevant. To achieve this, the following national and institutional goals for the learner of the Indian Medical Graduate training program are hereby prescribed. The first contact physician needs to be skillful to perform duties of primary care physician and have requisite skills for promotive, preventative, rehabilitative, palliative care & referral services.

3. National Goals

At the end of undergraduate program, the Indian Medical Graduate should be able to:

a) Recognize "health for all" as a national goal and health right of all citizens and by undergoing training for medical profession to fulfill his social obligations towards realization of this goal.
b) Learn key aspects of National policies on health and devote himself to its practical implementation.
c) Achieve competence in the practice of holistic medicine, encompassing promotive, preventive, curative and rehabilitative aspects of common diseases.
d) Develop scientific temper, acquire educational experience for proficiency in profession and promote healthy living.
e) Become an exemplary citizen by observance of medical ethics and fulfilling social and professional obligations, so as to respond to national aspirations.

4. Institutional Goals

In consonance with the national goals, each medical institution should evolve institutional goals to define the kind of trained manpower (or professionals) they intend to produce. The Indian Medical Graduates coming out of a medical institute should be competent in diagnosis and management of common health problems of the individual

and the community, commensurate with his/her position as a member of the health team at the primary, secondary or tertiary levels, using his/her clinical skills based on history, physical examination and relevant investigations.

a. Be competent for working in the health care team from Phase 1 MBBS to Compulsory rotatory medical internship (CRMI) in a gradual manner with increasing complexity in an integrated multi-department involvement.

b. Be competent to practice preventive, promotive, curative, palliative and rehabilitative· medicine in respect to the commonly encountered health problems.

c. Appreciate rationale for different therapeutic modalities; be familiar with the administration of the "essential medicines" and their common adverse effects.

d. Appreciate the socio-psychological, cultural, economic and environmental factors affecting health and develop humane attitude towards the patients in discharging one's professional responsibilities.

e. Possess the attitude for continued self-learning and to seek further expertise or to pursue research in any chosen area of medicine, action research and documentation skills.

f. Be familiar with the basic factors which are essential for the implementation of the National Health Programs including practical aspects of the following:

    i) Family Welfare and Maternal and Child Health (MCH);

    ii) Sanitation and water supply;

    iii) Prevention and control of communicable and non-communicable diseases;

    iv) Immunization;

    v) Health Education and advocacy;

    vi) Indian Public Health Standards (IPHS) at various level of service delivery;

vii) Bio-medical waste disposal;

viii) Organizational and or institutional arrangements.

g. Acquire basic management skills in the area of human resources, materials and resource management related to health care delivery, general and hospital management, principal inventory skills and counseling.

h. Be able to identify community health problems and learn to work to resolve these by designing, instituting corrective steps and evaluating outcome of such measures with maximum community participation.

i. Be able to work as a leading partner in health care teams and acquire proficiency in communication skills.

j. Be competent to work in a variety of health care settings.

k. Have personal characteristics and attitudes required for professional life including personal integrity, sense of responsibility and dependability and ability to relate to or show concern for other individuals.

5. Goals for the Learner

In order to fulfill these goals, the Indian Medical Graduate must be able to function in the following Roles appropriately and effectively:-

a. Clinician who understands and provides preventive, promotive, curative, palliative and holistic care with compassion.

b. Leader and member of the health care team and system with capabilities to collect, analyze, synthesize and communicate health data appropriately.

c. Communicate with patients, families, colleagues, and community in a methodological and skillful way using various approaches in family visits, family adoption program, clinic-social cases, clinical cases and AETCOM training programs.

d. Lifelong learner committed to continuous improvement of skills and knowledge.

e. Professional, who is committed to excellence, is ethical, responsive and accountable to patients, community and profession and society. Training of humanities and social sciences will be useful for this training.

6. Competency Based Training Programme of the Indian Medical Graduate

Competency based learning would include designing and implementing medical education curriculum that focuses on the desired and observable ability in real life situations. In order to effectively fulfill the roles, the Indian Medical Graduate would have obtained the following set of competencies at the time of graduation:

Clinician, who understands and provides preventive, promotive, curative, palliative and holistic care with compassion.

- Demonstrate knowledge of normal human structure, function and development from a molecular, cellular, biologic, clinical, behavioral and social perspective.
- Demonstrate knowledge of abnormal human structure, function and development from a molecular, cellular, biological, clinical, behavioral and social perspective.
- Demonstrate knowledge of medico-legal, societal, ethical and humanitarian principles that influence healthcare.
- Demonstrate knowledge of national and regional health care policies including the National Health Mission that incorporates National Rural Health Mission (NRHM) and National Urban Health Mission (NUHM), frameworks, economics and systems that influence health promotion, health care delivery, disease prevention, effectiveness, responsiveness, quality and patient safety.
- Demonstrate ability to elicit and record from the patient, and other relevant sources including relatives and caregivers, a history that is complete and relevant to disease identification, disease prevention and health promotion.
- Demonstrate ability to elicit and record from the patient, and other relevant sources. including relatives and caregivers, a history that is contextual to gender, age, vulnerability, social and economic status, patient preferences, beliefs and

values.

- Demonstrate ability to perform a physical examination that is complete and relevant to disease identification, disease prevention and health promotion.
- Demonstrate ability to perform a physical examination that is contextual to gender, social and economic status, patient preferences and values.
- Demonstrate effective clinical problem solving, judgment and ability to interpret and integrate available data in order to address patient problems, generate differential diagnoses and develop individualized management plans that include preventive, promotive and therapeutic goals.
- Maintain accurate, clear and appropriate record of the patient in conformation with legal and administrative frameworks.
- Demonstrate ability to choose the appropriate diagnostic tests and interpret these tests based on scientific validity, cost effectiveness and clinical context.
- Demonstrate ability to prescribe and safely administer appropriate therapies including nutritional interventions, pharmacotherapy and interventions based on the principles of rational drug therapy, scientific validity, evidence and cost that confirm to established national and regional health programmers and policies for the following:
    - Disease prevention,
    - Health promotion and cure,
    - Pain and distress alleviation, and
    - Rehabilitation and palliation.
- Demonstrate ability to provide a continuum of care at the primary (including home care) and/or secondary level that addresses chronicity, mental and physical disability,
- Demonstrate ability to appropriately identify and refer patients who may require· specialized or advanced tertiary care.
- Demonstrate familiarity with basic, clinical and translational research as it applies to the care of the patient.

Leader and member of the health care team and system

- Work effectively and appropriately with colleagues in an inter-professional health care team respecting diversity of roles, responsibilities and competencies of other professionals.
- Recognize and function effectively, responsibly and appropriately as a health care team leader in primary and secondary health care settings. Educate and motivate other members of the team and work in a collaborative and collegial fashion that will help maximize the health care delivery potential of the team.
- Access and utilize components of the health care system and health delivery in a manner that is appropriate, cost effective, fair and in compliance with the national health care priorities and policies, as well as be able to collect, analyze and utilize health data.
- Participate appropriately and effectively in measures that will advance quality of health care and patient safety within the health care system.
- Recognize and advocate health. promotion, disease prevention and health care quality improvement through prevention and early recognition: in a) life style diseases and b) cancer, in collaboration with other members of the health care team.

Communicator with patients, families, colleagues and community

- Demonstrate ability to communicate adequately, sensitively, effectively and respectfully with patients, families, colleagues and community in a language that they understand and in a manner that will be mutually satisfying and beneficial to them as well as care givers cum learners to yield positive health care outcomes.
- Demonstrate ability to establish professional relationships with patients, families, colleagues and community that are positive, understanding, humane, ethical, empathetic, and trustworthy.

- Demonstrate ability to communicate with patients, families, colleagues and community in a manner respectful of patient's preferences, values, prior experience, beliefs, confidentiality and privacy.

- Demonstrate ability to communicate with patients, colleagues and families in a manner that encourages participation and shared decision-making and overcoming hesitancy towards health initiatives.

Lifelong learner committed to continuous improvement of skills and knowledge

- Demonstrate ability to perform an objective self-assessment of knowledge and skills, continue learning, refine existing skills and acquire new skills.
- Demonstrate ability to apply newly gained knowledge or skills to the care of the patient.
- Demonstrate ability to introspect and utilize experiences, to enhance personal and professional growth and learning. Demonstrate ability to search (including through electronic means), and critically re- evaluate the medical literature and apply the information in the care of the patient.
- Be able to identify and select an appropriate career pathway that is professionally rewarding and personally fulfilling.

Professional who is committed to excellence, is ethical, responsive and accountable to patients, the profession and community.

- Practice selflessness, integrity, responsibility, accountability and respect.
- Respect and maintain professional boundaries between patients, colleagues and society.
- Demonstrate ability to recognize and manage ethical and professional conflicts.
- Abide by prescribed ethical and legal codes of conduct and practice.
- Demonstrate commitment to the growth of the medical profession as a whole.

A. CURRICULUM (subject wise competencies are given in Competency Based Undergraduate Curriculum 2024 on NMC website)

- **Phase 1 :**

1. ANATOMY

Subject Goals:

At the end of anatomy teaching, a student should be able to demonstrate:

i. Comprehension of normal structure, development and genetic pattern of organ and organ systems, as well as the clinical correlation of structures involved in diseases and its anatomical basis.

ii. Comprehension of the normal disposition, clinically relevant inter-relationships, functional and cross -sectional Anatomy of the various organs and structures of the body.

iii. Identification of the microscopic structure of various organs and tissues with the functions, as a prerequisite for understanding the altered state in various disease processes.

iv. Basic principles and sequential development of the organs and systems; recognize the critical stages of development and the effects of common teratogens, genetic mutations and environmental hazards.

v. Principles of karyotyping and identify the gross congenital anomalies.

vi. Principles of newer imaging techniques and interpretation of CT scan, sonogram, MRI & Angiography.

2. PHYSIOLOGY

Subject Goals:

At the end of physiology teaching, the learner must be able to:

i. Demonstrate knowledge of normal human physiology, organizational and functional relationship between cells, tissues and organs and body systems, age and sex related physiological changes in the organ functions that reflect normal growth and development.

ii. Explain physiological variations (Genotype/Phenotype) with healthy ageing through the course of life i.e. fetal, neonatal, childhood, adolescence and adulthood and demonstrate understanding of the physiological responses and adaptation to environment and exercise.

iii. Perform experiments to demonstrate physiological phenomenon and principles, interpret investigation results falling within the scope of physiology.

iv. Apply principles of Physiology in clinicopathological conditions, diagnosis, investigations and management of diseased conditions.

v. Conduct physical examination (general and system based) of normal subject in real or simulated conditions and demonstrate understanding of altered findings in physical examination of diseased conditions.

3. BIOCHEMISTRY

Subject Goals:

The learner after teaching learning in Biochemistry should be able to:

i. Understand and explain Biochemical and molecular processes involved in health and disease.

ii. Enlist and describe the cell organelles with their molecular and functional organization.

iii. Understand basic enzymology and emphasize on its clinical applications wherein regulation of enzymatic activity is disturbed.

iv. Describe Importance of nutrition in health and disease.

v. Describe digestion and assimilation of nutrients and consequences of

malnutrition.

vi. Describe function and interrelationships of various biomolecules and consequences of deviation from the normal.

vii. Describe and integrate metabolic pathways of various biomolecules with their regulatory mechanisms relevant to clinical conditions.

viii. Describe Biochemical basis and rationale of clinical laboratory tests, Perform biochemical analytical tests relevant to clinical screening and diagnosis using conventional techniques / instruments and interpret investigative data.

ix. Explain the biochemical basis of inherited disorders with their associated sequel.

x. Describe mechanisms involved in maintenance of water, electrolyte and acid base balance and consequences of their imbalances.

xi. Outline basics genetics, explain the molecular mechanisms of gene expression and regulation, basic principles of biotechnology and latest techniques and their applications in medicine.

xii. Demonstrate the skills of solving scientific and clinical problems and decision making.

- **Phase 2 :**

4. PATHOLOGY

Subject Goals:

At the end of the teaching learning in pathology learner should be able to:

i. Demonstrate knowledge of causes, mechanisms, alterations in gross and cellular morphology of organs in disease states.

ii. Explain, interpret and analyse the pathology with clinical condition including diseases which are locally and regionally relevant.

iii. Perform experiments to demonstrate routine pathological investigations on blood and explain principles, interpret investigation results.

iv. Perform experiments to demonstrate routine pathological investigations on the various biological samples and explain principles, interpret investigation results.

v. Demonstrate updated pathological investigations on the various biological samples.

5. MICROBIOLOGY

Subject goals

At the end of Microbiology teaching-learning activities learner should be able to:

i. Comprehend the immunological mechanisms in health and disease.

ii. Comprehend the of role of microbial agents in health and disease.

iii. Correlate the natural history, mechanisms and clinical manifestations of infectious diseases as they relate to the properties of microbial agents.

iv. Comprehend the principles and application of infection control measures.

v. Comprehend the basis of choice of laboratory diagnostic tests and their interpretation.

vi. Comprehend the principles of antimicrobial therapy and the control and prevention of infectious diseases.

vii. Comprehend the mechanisms of antimicrobial resistance (AMR) and its prevention along with concept and application of the antimicrobial stewardship program.

viii. Demonstrate the knowledge of outbreak investigation and its control.

ix. Describe commensals, opportunistic and pathogenic organisms and explain host parasite relationship.

x. Describe the characteristics (morphology, cultural characteristics, resistance, virulence factors, incubation period, mode of transmission etc.) of different microorganisms.

xi. Explain the various defense mechanisms of the host against the microorganisms which can cause human infection.

xii. Describe the laboratory diagnosis of microorganisms causing human infections and disease.

xiii. Describe the prophylaxis for the particular infecting microorganisms.

xiv. Operate routine and sophisticated instruments in the laboratory.

xv. Demonstrate respect for patient samples, confidentiality pertaining to patient identity in laboratory results and effective communication skills in patient care.

6. PHARMACOLOGY

Subject Goals:

At the end of teaching learning in pharmacology, the student should be able to:

i. Know about essential and commonly used drugs and an understanding of the pharmacologic basis of therapeutics.

ii. Apply pharmacokinetic and pharmacodynamic concept of drugs to drug selection and dosage regimens.

iii. Explain mechanism of action of commonly used drugs.

iv. Select and rationally prescribe drugs based on clinical condition and the pharmacologic properties, efficacy, safety and cost of medicines for common clinical conditions of national importance.

v. Understand generic, branded, over the counter (OTC) and prescription only drugs.

vi. Understand pharmacovigilance and identify adverse drug reactions and drug

interactions of commonly used drugs.

vii. Understand essential medicine concept and explore sources of drug information.

viii. Administer drugs through various common routes of administration.

ix. Understand and apply concept of evidence based medicine and rational use of drugs.

x. Communicate well in imparting drug related information to patients.

xi. Knows basics of new drug delivery and industry-doctor relationship.

xii. Critically analyze drug promotional literature and drug formulations.

xiii. Understand regulatory and ethical aspects of drug discovery and drug use.

- **PHASE III PART I**

7. FORENSIC MEDICINE AND TOXICOLOGY

Subject Goals:

At the end of teaching learning in forensic medicine and toxicology, the student should be able to:

i. Comprehend Medico-legal responsibilities of a general physician while rendering community service either in a rural primary health center or an urban health center.

ii. Comprehend of basic Medico-legal aspects of hospital and general practice.

iii. Understand the rational approach to the investigation of crime, based on scientific and legal principles.

iv. Understand the medico-legal framework of medical practice, codes of conduct, medical ethics, Professional Misconduct and Medical Negligence.

v. Conduct Medico-legal examination and documentation of various Medico-legal cases.

vi. Identify and interpret important post-mortem findings in common unnatural deaths.

vii. Conduct postmortem examination and Preparation of postmortem reports in unnatural deaths- Suicidal, Homicidal, Accidental.

viii. Prepare Medical Certificate of Cause of Death (MCCD) and Medico-legal reports of injuries and age estimation.

ix. Conduct examination and documentation of sexual offences, intoxication cases and preservation of relevant ancillary materials for medico-legal examination.

x. Analyse, Diagnose, manage legal aspects of common acute and chronic poisoning cases.

xi. Understand of latest Acts and laws related to medical professional including related Court judgements e.g. MTP Act, CPA, HOTA etc.

8. COMMUNITY MEDICINE

Subject Goals:

At the end of teaching learning in Community Medicine, the student should be able to:

i. Demonstrate understanding of role of primary care physician for preventive, promotive, curative, rehabilitative, palliative care & referral services.

ii. Demonstrate understanding of the concept of health and disease, demography, population dynamics and disease burden in National and global context, comprehension of principles of health economics and hospital management.

iii. Apply the understanding of physical, social, psychological, economic and environmental determinants of health and disease, ability to recognize and manage common health problems including physical, emotional and social aspects at individual family and community level in the context of National Health Programmes,

iv. Ability to implement and monitor National Health Programmes in the primary

care setting, ability to recognize, investigate, report, plan and manage community health problems including malnutrition and emergencies.

v. Apply understanding the role of nutrition in health promotion and disease prevention.

vi. Demonstrate role of researcher & community medicine physician by understanding the concepts of various epidemiological study designs and their application and epidemiology of diseases and ability to critically review.

vii. Demonstrate understanding of pandemic and epidemic situations with emerging and re-emerging diseases and able to investigate under supervision and plan, advise and promote preventive aspects as per international and national health regulations and programs.

viii. Demonstrate understanding of all principles of public health, community medicine, preventive aspects, social aspects utilizing family adoption program , providing services to the families adopted and being first care physician under the guidance of mentor.

ix. Apply the principles of behaviour change communication for improving health related aspects for communicable, non-communicable diseases, health promotive aspects, related to addictions, health related information and misinformation.

9. OTO-RHINOLARYNGOLOGY (ENT)

Subject Goals:

At the end of training in ENT, the learner should be able to:

i. Demonstrate knowledge of the common Otorhinolaryngological (ENT) emergencies and problems.

ii. Recognize, diagnose and manage common ENT emergencies and problems in primary care setting.

iii. Perform simple ENT procedures as applicable in a primary care setting.

iv. Recognize hearing impairment and refer to the appropriate hearing impairment rehabilitation programme.

v. Communicate to patients in respectful non-threatening non-judgmental empathetic manner appropriately Identify, discuss and defend medicolegal socio cultural and ethical issues as they pertain to consent for ENT surgical procedures and address patients queries in patient undergoing a basic ENT surgical procedure in a simulated environment.

10. OPHTHALMOLOGY

Subject Goals:

The student after teaching / learning in Ophthalmology should be able to:

i. Demonstrate knowledge of common eye disease in the community and the ability to diagnose and manage the common eye disease in primary care set up.

ii. Recognize diagnose and manage (primary management) of ocular emergencies in primary care setting and have knowledge of the indication for their referral.

iii. Demonstrate knowledge about various cause of blindness and visual impairment in the community.

iv. Know about various national programs for the control of blindness in the community and their implementation in the primary care setting.

v. Demonstrate knowledge about common Ocular drugs, their mechanism of action, their pharmaceutical, indications dosage schedule, side effects and complications.

vi. Demonstrate knowledge about common ocular surgeries, their indication and counselling regarding various ocular procedures and indications for referral from primary care setting.

vii. Demonstrate knowledge about eye donations, eye transplantation and eye bank.

viii. Perform simple ocular procedures as applicable in primary care setting.

ix. Be a team member of national program for control of blindness.

x. Have good rapport with public, colleagues, superiors and subordinates.

xi. Counsel patients and their families regarding various ocular conditions, management, indication for referral.

xii. Counsel the blind and visually impaired patients regarding their Rehabilitation.

- **Phase III PART** - II

11. GENERAL MEDICINE

Subject Goals:

At the end of training learning in general medicine, the learner should be able to:

i. Demonstrate understanding of the pathophysiologic basis, epidemiological profile, signs and symptoms of disease and their investigation and management.

ii. Competently interview and examine an adult patient and make a clinical diagnosis.

iii. Appropriately order and interpret laboratory tests.

iv. Initiate appropriate cost-effective treatment based on an understanding of the rational drug prescriptions, medical interventions required and preventive measures.

v. Follow up of patients with medical problems and refer whenever required.

vi. Communicate effectively, educate and counsel the patient and family.

vii. Manage common medical emergencies and refer when required.

viii. Independently perform common medical procedures safely and understand patient safety issues.

ix. Diagnose common clinical disorders with special reference to infectious diseases, nutritional disorders, tropical and environmental diseases.

x. Outline various modes of management including drug therapeutics especially dosage, side effects, toxicity, interactions, indications and contra-indications.

xi. Propose diagnostic and investigative procedures and ability to interpret them.

xii. Provide first level management of acute emergencies promptly and efficiently and decide the timing and level of referral, if required.

xiii. Recognize geriatric disorders and their management.

xiv. Develop clinical skills (history taking. clinical examination and other instruments of examination) to diagnose various common medical disorders and emergencies;

xv. Refer a patient to secondary and/or tertiary level of health care after having instituted primary care.

xvi. Perform simple routine investigations like hemogram, stool, urine, sputum and biological fluid examinations.

xvii. Assist the common bedside investigative procedure like pleural tap, Lumbar puncture, bone marrow aspiration/biopsy and liver biopsy.

12. PEDIATRICS

Subject Goals:

At end of training on pediatrics, the student should be able to:

i. Assess and promote optimal growth, development and nutrition of children and adolescents and identify deviations from normal.

ii. Recognize and provide emergency and routine ambulatory and First Level Referral Unit care for neonates, infants, children and adolescents and refer as may be appropriate.

iii. Perform procedures as indicated for children of all ages in the primary care setting.

iv. Recognize children with special needs and refer appropriately.

v. Promote health and prevent diseases in children.

vi. Participate in National Programmes related to child health and in conformation with the Integrated Management of Neonatal and Childhood Illnesses (IMNCI) Strategy.

vii. Communicate appropriately and effectively.

viii. Describe the normal Growth and Development during fetal life, Neonatal period, Childhood and Adolescence and the deviations thereof.

ix. Describe the common Pediatric disorders and emergencies in terms of Epidemiology, Etiopathogenesis, Clinical manifestations, Diagnosis and also describe the rational therapy and rehabilitation services.

x. Workout age related requirements of calories, nutrients, fluids, dosages of drugs etc. in health and disease.

xi. Describe preventive strategies for common infectious disorders, Malnutrition, Genetic and Metabolic disorders, Poisonings, Accidents and Child abuse.

xii. Outline national programs related to child health including Immunization programs.

xiii. Take detailed Pediatric and Neonatal history and conduct an appropriate physical examination of children and neonates, make clinical diagnosis, conduct common.

xiv. Bedside investigative procedures, interpret common laboratory investigations, plan and institute therapy.

xv. Take anthropometric measurements, resuscitate newborn, prepare oral rehydration solution, perform tuberculin test, administer vaccines available under current National programs, perform venesection, start intravenous fluids and provide nasogastric feeding.

xvi. Must have seen diagnostic procedures such as lumbar puncture, liver and kidney biopsy, bone marrow aspiration, pleural and ascitic tap, if not performed, and must know all steps of each procedure.

xvii. Distinguish between normal Newborn babies and those requiring special care and institute early care to all newborn babies including care of preterm and low birth weight babies, provide correct guidance and counseling about

breastfeeding and Complementary feeding.

xviii. Provide ambulatory care to all not so sick children, identify indications for specialized/ inpatient care and ensure timely referral to those who require hospitalization.

13. DERMATOLOGY, VENEREOLOGY AND LEPROSY

Subject Goals:

At the end of training, the learner should be able to:

i. Understand the principles of diagnosis of diseases of the skin, hair, nail and mucosa.
ii. Recognize, diagnose, order appropriate investigations and treat common diseases of the skin including leprosy in the primary care setting and refer as appropriate.
iii. Learn a syndromic approach to the recognition, diagnosis, prevention, counseling, testing and management of common sexually transmitted diseases including HIV based on national health priorities.
iv. Recognize and treat emergencies including drug reactions and refer as appropriate.
v. Counsel and provide patient education on safe sexual behaviors/ disease prevention/ prognosis including pretest counseling for HIV.

14. PSYCHIATRY

Subject Goals:

At the end of training, the learner should be able to:

i. Promote mental health and mental hygiene.

ii. Identify clinical features, make diagnosis and manage common psychiatric disorders across all ages.

iii. Identify and manage psychotic disorders, mainly schizophrenia.

iv. Identify and manage stress related psychiatric disorders, institute preliminary treatment in disorders difficult to manage, and refer appropriately.

v. Identify alcohol/ substance abuse disorders and refer them to appropriate centers.

vi. Assess the risk for suicide and refer appropriately.

15. GENERAL SURGERY

Subject Goals:

At the end of training in general surgery, the student should be able to:

i. Understand the structural and functional basis, principles of diagnosis and management of common surgical problems in adults and children.

ii. Choose, calculate and administer appropriately intravenous fluids, electrolytes, blood and blood products based on the clinical condition.

iii. Apply the principles of asepsis, sterilization, disinfection, rational use of prophylaxis, therapeutic utilities of antibiotics and universal precautions in surgical practice.

iv. Know common malignancies in India and their prevention, early detection and therapy.

v. Perform common diagnostic and surgical procedures at the primary care level.

vi. Know general knowledge about organ retrieval from deceased donor and living donor.

vii. Administer informed consent and counsel patient prior to surgical procedures.

viii. Describe etiology, pathophysiology, principles of diagnosis and management of common surgical problems including emergencies in adult and children.

ix. Describe common malignancies in the country and their management including prevention.

x. Enumerate different types of anesthetic agents, their indications, contraindications, mode of administration, and side effects.

xi. Plan various laboratory tests for surgical conditions and interpret the results.

xii. Identify and manage patients of hemorrhagic, septicemia and other types of shock.

xiii. Recognize, resuscitate, stabilize and provide Basic Life Support to patients following trauma.

xiv. Monitor patient of head, chest, spinal and abdominal injuries, both in adults and children.

xv. Provide primary care for a patient of burns.

xvi. Acquire principles of operative surgery including preoperative, operative and post operative care and monitoring.

xvii. Treat open wound including preventive measures against tetanus and gas gangrene.

16. OBSTETRICS AND GYNAECOLOGY

Subject Goals:

At the end of training in Obstetrics and gynecology, the learner should be able to:

i. Provide preconceptional counseling and antenatal care.

ii. Identify high-risk pregnancies and refer appropriately.

iii. Conduct normal deliveries, using safe delivery practices in the primary and secondary care settings.

iv. Prescribe drugs safely and appropriately in pregnancy and lactation.

v. Diagnose complications of labor, institute primary care and refer in timely manner.

vi. Perform early neonatal resuscitation.

vii. Provide postnatal care, including education in breast-feeding.

viii. Counsel and support couples in correct choice of contraception.

ix. Interpret test results of laboratory and radiological investigations as they apply to the care of the obstetric patient.

x. Apply medico-legal principles as they apply to tubectomy, Medical Termination of Pregnancy (MTP), Pre-conception and Prenatal Diagnostic Techniques (PC PNDT Act) and other related Acts.

xi. Elicit gynecologic history, perform appropriate physical and pelvic examinations and PAP smear in the primary care setting.

xii. Recognize, diagnose and manage common reproductive tract infections in the primary care setting.

xiii. Recognize and diagnose common genital cancers and refer them appropriately.

17. ORTHOPAEDICS

Subject Goals:

At the end of training in orthopedics, the learner should be able to:

i. Demonstrate ability to recognize and assess bone injuries, dislocation and poly-trauma and provide first contact care prior to appropriate referral.

ii. Recognize and manage common infections of bone and joints in the primary care setting.

iii. Recognize common congenital. metabolic, neoplastic, degenerative and inflammatory bone diseases, treat and refer appropriately.

iv. Perform simple orthopedic techniques as applicable to a primary care setting.

v. Recommend rehabilitative services for common orthopedic problems across all ages.

vi. Know the medico-legal aspects of trauma.

18. ANAESTHESIOLOGY

Subject Goals:

At the end of training in anesthesiology, the learner should be able to:

i. Explain principles of administration of general, regional and local anaesthesia including selection of cases, pre-operative evaluation, optimisation and recovery.

ii. Comprehend management of acute and chronic pain including labour analgesia

iii. Clear and maintain airway in an unconscious patient.

iv. Explain principles of oxygen therapy, select oxygen delivery devices and administer oxygen therapy judiciously.

v. Perform cardiopulmonary resuscitation with available resources and transfer the patient to higher centre for advanced life support.

vi. Comprehend the implications and obtain informed consent for various procedures and maintain the documents.

19. RADIODIAGNOSIS

Subject Goals:

i. Make rational choice of imaging modality and imaging procedure for common diseases

ii. Exhibit mindful behaviour regarding risks associated with imaging modalities

iii. Exhibit appropriate interdisciplinary conduct and documentation

iv. Image interpretation of normal x-rays, abnormalities in x-rays involving emergency conditions and diseases that would be treated by the primary care physician.

PHASE WISE TRAINING AND TIME DISTRIBUTION FOR PROFESSIONAL DEVELOPMENT

Subject wise competencies published in Competency Based Undergraduate Curriculum 2024 on NMC website and Attitude, Ethics and Communication (AETCOM) course, as published by the Medical Council of India and also made available on the NMC website, shall be the curriculum for the batches admitted in MBBS from the academic year 2024-25 onwards. **Teaching learning and assessment may be carried out using bilingual mode (Assamese, Bangla, Gujarati, Hindi, Kannada, Malayalam, Marathi, Odiya, Punjabi, Tamil, and Telugu) along with English language.**

In order to ensure that training is in alignment with the goals and competencies required for a medical graduate, there shall be a **Foundation Course to** orient medical learners to MBBS programme, and provide them with requisite knowledge, communication (including electronic), technical and language skills.

I. Training period and time distribution:

Universities shall organize admission timing and admission process in such a way that teaching in the phase I commences with induction through the Foundation Course at the beginning of academic year. There shall be no admission of students in respect of any academic session beyond dates specified for each academic year. **The Universities shall not register any student (in MBBS course) admitted beyond the said date.** Any student identified as having obtained admission after the last date for closure of admission shall be discharged from the course of study, or any medical qualification granted to such a student shall not be a recognized qualification by National Medical Commission.

The institution which grants admission to any student after the last date specified from the same shall also be liable to face such action as may be prescribed by National Medical Commission.

Every learner shall undergo a period of certified study extending over 4 ½ academic years, divided into four professional years from the date of commencement of course to the date of completion of examination which shall be followed by one year of compulsory rotating medical internship.

Each academic year will have at least 39 teaching weeks with a minimum of 39 hours a week.

Large group teaching shall not exceed one third of the total allotted hours for a subject. Two third of the total allotted hours shall include small group teaching, interactive sessions, practicals, clinical, small group teaching, self-directed learning and tutorials etc. The learning process shall include clinical experiences, problem- oriented approach, case studies and community health care activities.

Learner centered teaching learning methods shall include early clinical exposure, problem/case-based learning, case studies, community-oriented learning, self-directed, integrated learning, experiential learning & electives. Teaching and learning shall be aligned and integrated across specialties both vertically and horizontally for better learner comprehension.

At the end of each professional year university examination will be conducted. If any student fails to clear the regular university examination, student will appear in supplementary examination.

Supplementary examinations and declaration of results shall be processed by universities within 6-8 weeks from the date of declaration of the results of the main examination for every professional year, so that the candidates, who pass, can join the main batch for progression.

If the student fails in the supplementary examination in any phase of MBBS, the student goes to the junior batch for teaching learning as well as for university examinations. There shall be no supplementary batches. If a candidate has not appeared for university examination (both theory and practical) for a subject then it shall not be counted as an attempt for that subject. Partial attendance in examination (only theory or only practical) in any subject shall be counted as an attempt. No more than four attempts shall be allowed for a candidate to pass the Phase 1 examination. The total period for successful completion of phase I course shall not exceed four (4) years. A learner shall not be entitled to graduate later than ten (10) years of her/his joining the first MBBS course (including continuous rotatory medical internship).

Phase wise details are:

- A candidate, who fails in the Phase-I examination, shall not be allowed to join the Phase-II until the candidate passes all subjects of Phase-I examination.
- A candidate who fails in the Phase-II examination, shall be allowed to join the Phase-III Part I training, however candidate shall not be allowed to

appear for the university examination unless the candidate has passed Phase-II university examination and completed eligibility requirement for Phase-III Part I university examinations.

- A candidate who fails in the Phase-III Part I examination shall be allowed to join Phase-III part II training, however candidate shall not be allowed to appear for the university examination unless the candidate has passed Phase-III Part-I university examination and completed eligibility requirement for Phase-III Part II university examinations.

II. The period of 4½ years is divided as follows:

i) **Phase-I of 12 months including Foundation Course of two weeks and university exams.** It shall consist of - Anatomy, Physiology, Biochemistry, Introduction to Community Medicine, Humanities, Attitude, Ethics & Communication (AETCOM) module, family adoption programme through village outreach where-in each student shall adopt minimum of three (03) families and preferably at least five (05) families, simulation-based learning, early clinical exposure, alignment & integration and pandemic module integrated.

ii) **Phase-**II **of 12 months including university exams.** It will consist of Pathology, Pharmacology, Microbiology, family visit under Community Medicine, General Surgery, General Medicine, Obstetrics & Gynecology, AETCOM module, Forensic Medicine & Toxicology, alignment & integration and introduction to clinical subjects. Family Adoption Programme through village outreach where-in each student shall continue to follow up and provide necessary services under the supervision. Pandemic module integration & simulation-based learning to be continued with increasing complexity.

The clinical exposure to learners will be in the form of learner-doctor method of clinical training in all phases. The emphasis will be on primary, preventive and comprehensive health care. A part of training during clinical postings shall take place at the *primary level* of health care. It is desirable to provide learning experiences in secondary health care, wherever possible. This will involve:

- Experience in recognizing and managing common problems seen in outpatient, inpatient and emergency settings,
- Involvement in patient care as a team member,
- Involvement in patient management and performance of basic procedures.

iii) **Phase** III - **30 months**

a. Phase III Part I **(12 months, including University exams)**

Forensic Medicine and Toxicology, Community Medicine, Medicine & allied subjects, Ophthalmology, Otorhinolaryngology (ENT), Surgery & allied subjects, Pediatrics, Obstetrics& Gynecology, Radiodiagnosis, Anesthesiology, AETCOM, Pandemic module integration, alignment & integration and Clinical postings. Family Adoption Programme through village outreach and simulation- based learning to be continued with increasing complexity.

Electives (1 month) shall be in 2 blocks of 15 days each in Phase III part II. First 15days block starts after annual exam of Phase III MBBS part 1 and 2nd block after the end of 1st elective.

b. Phase 3 Part II(18 months, including University exam)-

Subjects include:

Medicine and allied specialties (General Medicine, Psychiatry, Dermatology, Venereology and Leprosy (DVL), Surgery and allied specialties (General Surgery, Orthopedics, Anesthesiology and Radiodiagnosis), Obstetrics and Gynecology (including Family Welfare), Pediatrics, AETCOM module, Pandemic module integration, alignment & integration and Clinical postings.

Ill. Distribution of teaching hours phase wise:

a Phase I, phase II and phase III- part 1 teaching hours:

Time allotted 12 months (approximately 52 weeks) out of which time available for teaching- learning: approximately 39 weeks.

(Excluded- 13 weeks: Preliminary/ University examinations and results: 9 weeks, vacations: 2 weeks, public holidays: 2 weeks)

Time distribution in weeks: 39 weeks x 39 hours = 1521 hours for Teaching-Learning.

b Phase-III Part-II, teaching hours:

Time allotted: 18 months (approx. 78 weeks)

Time available: Approx. 62 weeks (excluding 16 weeks) (39 hours/ week)

Prelim / University Exam & Results: 10 weeks

Vacation: 3 weeks

Public Holidays: 3 weeks

Time distribution in weeks: 62 x 39 hrs= 2418 hrs available for Teaching-Learning

(Clinical Postings: 15 hours/ week Phase II onwards included in academic schedule. These are attached in separate annexure with all relevant tables).

- Academic calendar is given in annexure.
- Distribution of subjects for Professional Phase-wise training is given in annexure
- Minimum teaching hours prescribed in various disciplines phase wise are given in annexures.
- Distribution and duration of clinical postings is given in annexure.

Time allotted excludes time reserved for internal /University examinations, and vacation.

Phase II clinical postings shall commence before / after declaration of results of the first professional phase examinations, as decided by the institution/ University.

Phase III part I and part II clinical postings shall start no later than two weeks after the completion of the previous professional examination.

Note:

A total of approximately 20% of allotted time of a Phase shall be utilized for integrated teaching learning with other subjects. This will be included in the assessment of subjects.

The period of training is minimum suggested. Adjustments where required depending on availability of time may be made by the concerned college/ institution. This period of training does not include university examination period. Pandemic module teaching hours are added to respective allocated subjects and these subjects will teach as per module.

An exposure to skills lab based teaching by each subject in each phase shall be there weekly or fortnightly.

c New teaching /learning elements (Refer to booklets on NMC website related to these elements)

1) Foundation Course

Goal: The goal of the Foundation Course is to prepare a learner to study medicine effectively.

Objectives:

(a) Orient the learner to:

- The medical profession and the physician's role in society
- The MBBS programme
- Alternate health systems i.e. AYUSH in India and history of Medicine
- Medical ethics, attitudes and professionalism
- Health care system, its delivery and visits to health centers
- National health programmes and policies
- Universal precautions and vaccinations
- Patient safety and biohazard safety
- Principles of primary care(general and community based care)
- Mental Health
- The academic ambience

(b) Enable the learner to acquire enhanced skills in:

- Language
- Interpersonal relationships
- Communication emphasis on clinico-laboratory communication
- Learning including self-directed learning
- Time management
- Stress management, Mental Health
- Use of information technology, and artificial intelligence

(c) Train the learner to provide:

- First-aid
- Basic /cardiopulmonary/emergency life support

In addition to the above, learners maybe enrolled in one of the following programmes which will be run concurrently:

- Local language programme
- English language programme
- Computer skills

These may be done in the last two hours of the day. These sessions must be as interactive as possible. Sports (to be used through the Foundation Course as protected 04 hours/week).Leisure and extracurricular activity (to be used through the Foundation Course).

Institutions shall develop learning modules and identify the appropriate resource persons for their delivery. The time committed for the Foundation Course may not be used for any other curricular activity. The Foundation Course shall have a minimum of 75% attendance of all students mandatorily. This will be certified by the Principal/Dean of the college.

The Foundation Course shall be organized by the Coordinator appointed by the Principal/ Dean of the college and shall be under supervision of the Heads of MBBS phase 1departments.

Every college shall arrange for a meeting with parents/ wards of all students and records of the same shall be made available to UGMEB of NMC. Mentor- mentee program shall be carried out judiciously, with the ratio of 1 Mentor to 3 mentees. Mentor may be selected from all disciplines from the level of Professor/ HOD to Assistant Professor. Mentor shall be allotted his mentees during the foundation course itself from Phase 1. The mentee shall stay connected with the Mentor throughout his career till he completes CRMI. Each year when 3 new mentees are added from phase 1 to the mentor, the senior batch students shall support the junior students and create a healthy sibling environment (instead of ragging).

2) Early Clinical Exposure

Objectives: The objectives of early clinical exposure of the first-year medical learners are to enable the learner to:

- Recognize the relevance of sciences basic to diagnosis, patient care and management,
- Provide a context that will enhance learning of sciences basic to clinical reasoning,
- Relate to experience of patients as a motivation to learn,
- Recognize attitude, ethics and professionalism as integral to doctor- Patient relationship,
- Understand the socio-cultural context of disease through the study of humanities.

Elements

- Phase I subject correlation: i.e. apply and correlate principles of phase I subjects as they relate to patient care (this shall be part of integrated modules as well as in routine teaching wherever relevant).

- Clinical skills: to include basic skills in interviewing patients, doctor- patient communication, ethics and professionalism, critical thinking and analysis and self-learning (this training shall be imparted in the time allotted for early clinical exposure).

- Humanities: to introduce learners to a broader understanding of the socio-economic framework and cultural context within which health is delivered through the study of humanities and social sciences.

3) Electives

Objectives: To provide the learner with opportunities:

- For diverse learning experiences.
- It is mandatory for learners to do an elective. The elective time shall not be used to make up for missed clinical postings, shortage of attendance or other purposes.
- Institutions will pre-determine the number and nature of electives, names of the supervisors, and the number of learners in each elective based on the local conditions, available resources and faculty.
- Electives on topics in areas such as Research methodology, Research ethics, Use of Artificial intelligence and computers in Health and Medical Education, Health Management, Health economics, Indian system of medicine, Medical photography /clinical photography, Global health, Evidence based medicine, Art and music, Physiotherapy, Nutrition, ethical use of technology including artificial intelligence etc. in medicine, Literary activities, etc. may be provided by the college/ institution.
- It shall be preferable that elective choices are made available to the learners in the beginning of the academic year.
- The learner must submit a learning log book based on both blocks of the electives.
- 75% attendance in the electives and submission of log book maintained during electives is required for eligibility to appear in the University MBBS examination/ NExT.
- Institutions may use part of this time for strengthening basic skill certification.

4) Attitude, Ethics and Communication Module (AETCOM)

Objectives of the programme: At the end of the programme, the learner must demonstrate ability to:

- Understand and apply principles of bioethics and law as they apply to medical practice and research, understand and apply the principles of

  clinical reasoning as they apply to the care of the patients,

- Understand and apply the principles of system-based care as they relate to the care of the patient,
- Understand and apply empathy and other human values to the care of the patient,
- Communicate effectively with patients, families, colleagues and other health care professionals,
- Understand the strengths and limitations of alternative systems of medicine,
- Respond to events and issues in a professional, considerate and humane fashion,
- Translate learning from the humanities in order to further his professional and personal growth.

Learning experiences:

- This will be a longitudinal programme spread across the continuum of the MBBS programme including internship.
- Learning experiences shall include small group discussions, patient care scenarios, self-directed learning, workshops, seminars, role plays, large/small group teaching etc.
- Application based subject oriented cases may be used as additional resources for this training and real life case studies are the best examples for this AETCOM training. Community based case studies must be used in communication aspects of health education, informed consent and counseling in addition to clinical case studies.
- Attitude, Ethics & Communication Module (AETCOM module) developed by the erstwhile Medical Council of India should be used longitudinally for purposes of instruction.
- 75% attendance in AETCOM Module is mandatory for eligibility to appear for all

university examinations of all subjects in each Phase.

(5) **Alignment and integration (AIT) teaching**

Integration is a learning experience that allows the learner to perceive relationships from blocks of knowledge and develop a unified view of its basis and its application.

Objectives

In the earlier phases, the purpose of vertical integration (across phases) is to emphasize the applicative use of the basic science concept taught. In the later phases, its purpose is to utilise and build on prior knowledge and emphasize the foundations of clinical practice.

Learning experiences

In order to achieve this, the MBBS curriculum will become -

a) aligned to the extent possible - meaning that as much as possible topics/systems in different subjects in the same phase will be grouped together in the same weeks/months in timetable for teaching learning. The purpose of horizontal integration (within a phase) is to remove redundancy and provide interconnectedness. Suggested formats for alignment in phase 1 & 2aregiven in annexures. Phase 3 part 1 and 2 can be aligned accordingly as needed.

b) integrated to a limited extent both vertically and horizontally.

Integration must be horizontal (i.e. across disciplines in a given phase of the course) and vertical (across different phases of the course). Teaching/learning occurs in each phase through study of organ systems or disease blocks in order to integrate the learning process. Clinical linker cases must be used to integrate and link learning across subjects.

The six integrated modules to be used across 4 years ½ are anemia, ischemic heart disease, diabetes mellitus, tuberculosis, hypertension and thyroid. The complete modules are part of documents on NMC website.

(6) Learner-doctor method of clinical training (Clinical Clerkship)

a. Goal: To provide learners with experience in:

- Longitudinal patient care,
- Being part of the health care team,
- Hands-on care of patients in outpatient and in-patient setting.

b. Structure:

- The first clinical posting in Phase II shall orient learners to the patient, their roles and the specialty.
- The learner-doctor programme shall progress as outlined in Table 9.
- The learner shall function as a part of the health care team with the following responsibilities:
- Be a part of the units' out-patient services on admission days,
- Remain with the admission unit until at least 6 PM except during designated class hours,
- Be assigned patients admitted during each admission day for whom he will undertake responsibility, under the supervision of a senior resident or faculty member,
- Participate in the unit rounds on its admission day and will present the assigned patients to the supervising physician,
- Follow the patient's progress throughout the hospital stay until discharge,
- Participate, under supervision, in procedures, surgeries, deliveries etc. of assigned patients,
- Participate in unit rounds on at least one other day of the week excluding the admission day,
- Discuss ethical and other humanitarian issues during unit rounds,
- Attend all scheduled classes and educational activities,
- Document his observations in a prescribed log book /case record.

No learner will be given independent charge of the patient in the capacity of primary physician of the concerned patient.

The supervising physician shall be responsible for all patient care decisions and guide the learner from time to time as required.

(7) Assessment:

- A designated faculty member in each unit will coordinate and facilitate the activities of the learner, monitor progress, provide feedback and review the log book/ case record.
- The log book/ case record must include the written case record prepared by the learner including relevant investigations, treatment and its rationale, hospital course, family and patient discussions, discharge summary etc.
- The log book shall also include records of outpatients assigned. Submission of the log book/ case record to the department is required for eligibility to appear for the final examination of the subject. An e-logbook is desirable.

Assessment

I. **Eligibility to appear for Professional examinations**

The performance in essential components of training are to be assessed, based on following three components:

(a) Attendance

- There shall be a minimum of 75% attendance in theory and 80% attendance in practical /clinical for eligibility to appear for the examinations in that subject. In subjects that are taught in more than one phase - the learner must have 75% attendance in theory and 80% attendance in practical in each phase of instruction in that subject. There shall be a minimum of 75% attendance in AETCOM and minimum of 80% attendance in family visits under Family adoption

programme. Each student shall adopt minimum 3 families/ households and preferably five families. The details shall be as per Family Adoption Program guidelines.

- If an examination comprises more than one subject (for e.g., General Surgery and allied branches), the candidate must have a minimum of 75% attendance in each subject including its allied branches, and 80% attendance in each clinical posting.

Learners who do not have at least 75% attendance in the electives will not be eligible for the Third Professional - Part II examination/ NExT.

(b) Internal Assessment (IA): Internal assessment shall be based on day-to-day assessment. It shall relate to different ways in which learners participate in the learning process including assignments, preparation for seminar, clinical case presentation, preparation of clinical case for discussion, clinical case study/ problem solving exercise, participation in project for health care in the community. Internal assessment should have both subjective and objective assessment. Internal assessment shall not be added to summative assessment. However, internal assessment marks in absolute marks should be displayed under a separate column in a detailed marks card. The internal assessment marks for each subject will be out of 100 for theory and out of 100 for practical/clinical (except in General Medicine, General Surgery and Obstetrics & Gynaecology, in which theory and practical assessment will be of 200 marks each).

For subjects that teach in more than one phase, cumulative IA to be used as eligibility criteria. The final cumulative marks are to be used for eligibility. The details are:

I. General medicine: The IA of 200 marks in medicine shall be divided across phases as Phase II - 50 marks,
Phase III part 1 - 50 marks
Phase III part 2 - 100 marks.
Phase III part 2 - 100 marks is divided as
Medicine - 75 marks
Psychiatry - 13 marks

Dermatology- 12 marks.

The final cumulative IA for Medicine is out of 200 marks for theory and practical each.

II. General surgery: The IA in surgery shall be divided across phases as:

Phase II - 25 marks,

Phase III part 1 - 25 marks,

Phase III part 2 - 150 marks.

Phase III part 2 - 150 marks shall be divided as

General surgery - 75 marks,

Orthopedics -50 marks,

Anesthesia -13 marks

Radiodiagnosis - 12 marks.

The final cumulative IA for surgery is out of 200 marks for theory and practical each.

III. IA of Forensic Medicine and Toxicology is divided as 25 marks in phase II and 75 marks in Phase III part 1. The final cumulative IA is out of 100 for theory and practical each.

IV. IA in Community Medicine is divided as 25 marks in phase I, 25 marks in phase II, and 50 marks in Phase III- part 1. The final cumulative IA for Community Medicine is out of 100 marks for theory and practical each.

V. IA in ophthalmology and ENT is divided as 25 marks in phase II and 75 marks in Phase III part 1. The final cumulative IA is out of 100 for theory and practical each for each subject.

(c) Certifiable competence achieved:

1. Learners must have completed the required certifiable competencies for that phase of training and completed the log book appropriate for that phase of training to be eligible for appearing at the final university examination of that subject.

2. Regular periodic examinations shall be conducted throughout the course. There shall be no less than three theory and practical internal assessment

examinations in each subject of phase 1 &II, and this mandatorily includes pre-university examination. There shall be no less than two theory and clinical examinations in each subject of Phase III part 1 & 2 and this mandatorily includes an end of posting assessment. Log book (including required skill certifications) to be assessed and marks given from 10-20% in internal assessment.

3. Learners must secure at least 50% of the total marks (combined in theory and practical / clinical; and minimum 40% in theory and practical separately) for internal assessment in a particular subject in order to be eligible for appearing at the final University examination of that subject.
4. The results of internal assessment should be intimated to students at least once in 3 months and as and when a student wants to see the results.
5. The faculty must discuss the examination results with the students in a class room so as to make them understand areas for improvement.

Remedial measures:

A student whose has deficiency(s) in any of the 3 criteria that are required to be eligible to appear in university examination, should be put into remedial process as below:

- *During the course:* If Internal assessment (IA) or attendance is less or/and certifiable competencies not achieved and marked in log book in quarterly/ six monthly monitoring, the students/parents must be intimated about the possibility of being detained much before the final university examination, so that there is sufficient time for remedial measures. These students should be provided remedial measures as and when needed to improve IA. Since regular classes are going on and students have time, they should complete remediation in regular classes for attendance and not in extra classes. Any certifiable competency/ IA marks deficiency should be attended with planned teaching/tests for them. Student should complete the remedial measures and it should be documented. **In spite of all above measures, if student is still not meeting the criteria to be eligible for regular exam he shall be detained and offered remedial for same batch supplementary exam. For attendance, he will be allowed remedial measures only if attendance**

is more than 60% for each component.

- *At the end of phase:* If Internal assessment (IA) or attendance is less or/and certifiable competencies not achieved and marked in log book at the end of regular classes in a phase, the student is detained to appear in regular university examination of that batch.

The colleges should provide enough support to students to implement remedial measures so that student gets a chance to improve IA for supplementary exam/next batch regular exam. The remedial measure should be specific and targeted to the deficiencies. Colleges should make sure that these remedial measures are not misused i.e. extra classes just to complete attendance where students complete a big percentage in a few days in all subjects. There should be regular classes for students with deficiencies to improve their learning. Similarly, tests should be conducted at appropriate intervals and not one after other to complete the IA marks. The detained student is required to attend all the classes/ tests planned by the departments as part of remedial measures to be eligible to sit for the university examination.

All students who are detained or fail for various reasons should be provided with:

a) Regular classes in that subject at appropriate intervals. These classes should be spread over time if multiple subjects are involved. The classes should be scheduled for improvement.

b) Similarly, regular tests can be planned with atleast one-week intervals in between tests. Test should include theory as well as practical/clinical tests.

c) Attendance of same phase-should be added to previous attendance to calculate percentage. The absolute number of classes attended should be added to earlier attended classes. The number will not be added to denominator provided the denominator is as per regulations. Clinical posting attendance shortage should be addressed by posting students in the specific subjects for the duration as per regulations in that phase.

d) Attendance of next phase- For students who have failed in regular examinations of phase 2 onwards, they can attend classes of next phase. If these students pass the supplementary exam of original phase, then the attendance of next phase will be considered. However, if they fail in supplementary examination, the attendance of next

phase will not be considered and they have to attend teaching and assessment with the junior batch.

2.University Examinations: University examinations are to be designed with a view to ascertain whether the candidate has acquired the necessary knowledge, minimal level of skills, ethical and professional values with clear concepts of the fundamentals which are necessary for him to function effectively and appropriately as a physician of the first contact.

1. Nature of questions in theory examinations shall include different types such as structured essays like Long-Answer Questions (LAQ), Short-Answer Questions (SAQ) and Multiple-Choice Questions (MCQ). Scenario based MCQs shall be accorded a weightage of 10-20% of the total marks of each theory paper. Blueprint must be used for theory question papers. A format of sample paper is given in module 3 assessment on NMC website. Q. no 4 as per this format should be on integrated topics as applicable to subjects (in subject that has competencies in integrated modules). A sample format with marks is given in annexures.

2. Practical/clinical examinations shall be conducted in the laboratories and /or hospital wards and a blueprint must be used. The objective will be to assess proficiency and skills to conduct experiments, interpret data and form logical conclusion. Clinical cases kept in the examination must be common conditions that the learner may encounter as a physician of first contact in the community. Selection of rare syndromes and disorders as examination cases is to be discouraged. Emphasis should be on candidate's capability to elicit history, demonstrate physical signs, write a case record, analyze the case and develop a management plan.

3. Viva/oral examination should assess approach to patient management, emergencies and attitudinal, ethical and professional values. Candidate's skill in interpretation of common investigative data like X-rays, identification of specimens, ECG, etc. is to be also assessed.

4. Application based questions should be included for newer CBME components like foundation course, ECE, AETCOM, Integrated topics, student-learner methods etc

in all theory, practical and clinical examinations of all internal assessments and university assessments.

University Examinations shall be held as under:

a) **Phase-I** shall be held at the end of Phase I training (in the 12th month of that training), in the subjects of Anatomy, Physiology and Biochemistry**.**

b) **Phase-II** examination shall be held at the end of Phase II training (12th month of that training), in the subjects of Pathology, Microbiology, and Pharmacology

c) **Phase III Part 1**examination shall be held at the end of Phase III part 1 of training (12th month of that training) in the subjects of Community Medicine, Forensic Medicine &Toxicology, Ophthalmology and Otorhinolaryngology.

d) **Phase III Part 2** / National Exit Test (NExT) as per NExT regulations- (Final Professional) examination shall be at the end of 17th / 18th month of that training, in the subjects of General Medicine, General Surgery, Obstetrics & Gynecology, Pediatrics, and allied subjects as per NExT Regulations**.**

Criteria for passing in a subject: A candidate shall obtain a cumulative 50% marks in University conducted examination including theory and practical and not less than 40% separately in Theory and in Practical in order to be declared as passed in that subject. **In subjects that have two papers, the learner must secure a minimum** 40% marks in aggregate (both theory papers together).

Appointment of Examiners:

(1) Person appointed as an examiner in the particular subject must have at least three years of total teaching experience as Assistant Professor after obtaining postgraduate degree following MBBS, in the concerned subject in a college affiliated to a recognized medical college (by UGMEB of NMC).

(2) For Practical /Clinical examinations, there shall be at least four examiners for every learner, out of whom not less than 50% must be external examiners. Of the four examiners, the senior-most internal examiner shall act as the Chairman and coordinator of the whole examination programme so that uniformity in the matter of assessment of

candidates is maintained.

(3) A University having more than one college shall have separate sets of examiners for each college, with internal examiners from the concerned college. External examiners may be from outside the college/ university/ state/ union territory.

(4) There shall be a Chairman of the Board of paper-setters who shall be an internal examiner and shall mandatorily moderate the theory question paper(s).

(5) All eligible examiners with requisite qualifications and experience can be appointed internal examiners by rotation in their subjects.

(6) All theory paper assessment should be done as a central assessment program (CAP) of the concerned university.

(7) Internal examiners shall be appointed from the same institution for unitary examination in the same institution. For pooled examinations at one centre, the approved internal examiners from the same university may be appointed.

(8) The Examiners for General Surgery and allied subjects shall be from General Surgery and 25% from orthopedics. There shall be one orthopedics examiner out of four examiners (either internal or external).

(9) Ophthalmology and ENT examinations to be held as separate examinations and not combined with other subjects.

(10) There shall be no grace marks to be considered for passing in an examination.

ANNEXURES:

1. AETCOM module curricular governance and blueprinting
2. Academic calendar
3. Phase wise distribution of subjects
4. Foundation course hours distribution
5. Distribution of hours phase wise
6. Clinical postings distribution
7. Learner doctor method

8. University examination marks
9. Sample format of paper theory with marks distribution
10. Alignment Phase I
11. Alignment Phase II
12. Family adoption programme
13. Guidelines for manpower requirement for research facilities
14. Disability criteria for admission to MBBS

Annexure 1

AETCOM Modules teaching and assessment

The tables below show the suggested AETCOM blueprinting for various university papers and for module leader/in-charge for coordinating Module teaching. Each module leader/in-charge should select a multi-subject team and then the module is taught by various members of the team. The module teaching learning activities should be planned and conducted by this team.

Assessment: All internal and University exams must have one question/application based question on AETCOM in each theory paper (5%) and it should be assessed in various components of practical/clinical exams.

AETCOM Phase I		
Subject	**Paper**	**Module number**
Anatomy	Paper 1	1.5
	Paper 2	1.4 foundations of communications
Physiology	Paper 1	1.2
	Paper 2	1.3
Biochemistry	Paper 1	1.1 ● Enumerate and describe professional qualities and roles of a physician ● Describe and discuss commitment to lifelong learning as an important part of physician growth
	Paper 2	1.1 ● Describe and discuss the role of a physician in health care system ● Identify and discuss physician's role and responsibility to society and the community that she/ he serves

AETCOM Phase II		
Subject	**Paper**	**Module number**
Microbiology	Paper 1	2.1
	Paper 2	2.8
Pharmacology	Paper 1	2.2, 2.3
	Paper 2	2.5
Pathology	Paper 1	2.4
	Paper 2	2.7

AETCOM Phase III part I		
Subject	**Paper**	**Module number**
Ophthalmology	Single paper	3.1
ENT	Single paper	3.3
Forensic Medicine & Toxicology	Single paper	3.4
Community Medicine	Paper 1	3.2
	Paper 2	3.5

AETCOM Phase III part 2		
Subject	**Competency Number**	**Competency**
Medicine and Allied Subjects, integration	Paper 1	4.1
	Paper 2	4.3
Surgery and Allied Subjects,	Paper 1	4.4
	Paper 2	4.5, 4.6
Obstetrics and Gynecology	Paper 1	4.2, 4.7
	Paper 2	4.8
Pediatrics	Single paper	4.9

Annexure 2 Time distribution of MBBS Teaching & Examination Schedule

Academic calendar for admission batch 2024-2025												
	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Adm year										1 14 Oct	2	3
Phase 1 exam	4	5	6	7	8	9	10	11	12 Phase 1 exam, result	13 Phase 2 starts	14	15
Phase 2 exam	16	17	18	19	20	21	22	23	24 Phase 2 exam, result	25 Phase 3 part 1 starts	26	27
Phase 3 part 1 exam	28	29	30	31	32	33	34	35	36 Phase 3 Part 1 exam, result	37 Phase 3 part 2 starts	38	39
	40	41	42	43	44	45	46	47	48	49	50	51
Phase 3 part 1 exam	52	53	54 Proposed NExT step1	1 CRMI	2	3	4	5	6	7	8	9
Internship	10	11	12 Proposed NExT step2									

Legends:

CRMI-Compulsory rotating medical internship

Proposed time distribution of MBBS Teaching & Examination Schedule

Generic proposed academic calendar from admission batch 2025-2026 onwards												
	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Adm year									1	2	3	4
Phase 1 exam	5	6	7	8	9	10	11	12 Phase 1 exam, result	13 Phase 2 starts	14	15	16
Phase 2 exam	17	18	19	20	21	22	23	24 Phase 2 exam, result	25 Phase 3 part 1 starts	26	27	28
Phase 3 part 1 exam	29	30	31	32	33	34	35	36 Phase 3 Part 1 exam, result	37 Phase 3 part 2 starts	38	39	40
	41	42	43	44	45	46	47	48	49	50	51	52
Phase 3 part 1 exam	53	54 Proposed NExT step1	1 CRMI	2	3	4	5	6	7	8	9	10
Internship	11	12 Proposed NExT step2										

Legends:

CRMI-Compulsory rotating medical internship

Annexure 3

Distribution of subjects in each Professional Phase

Phase & year of MBBS training	Subjects & Teaching Elements	Duration (months)	University Examination
Phase-I	1. Foundation course of 2 weeks at start of course 2. Anatomy, Physiology & Biochemistry, Introduction to Community Medicine, including Family adoption programme (FAP) through village outreach 3. Early Clinical Exposure 4. Attitude, Ethics, and communication Module (AETCOM) including Humanities	12 months	Phase 1
Phase-II	1. Pathology, Microbiology, Pharmacology 2. Forensic Medicine and Toxicology 3. Introduction to clinical subjects 4. Clinical postings, Family visits for FAP 5. AETCOM	12 months	Phase 2
Phase-III Part-I including Electives 1 month	1. Community Medicine, Forensic Medicine and Toxicology, Medicine & allied, Surgery & allied, Pediatrics, Obstetrics & Gynecology 2. Family visits for FAP 3. Oto-rhinolaryngology, 4. Ophthalmology 5. Clinical postings 6. AETCOM 7. Electives- 1 month, 2 blocks, 15 days each	12 months	Phase 3 Part 1
Phase-III Part- II, MBBS	1. General Medicine, Dermatology, Psychiatry, Pediatrics, General Surgery, Orthopedics, Radiodiagnosis, Anesthesiology, Obstetrics & Gynecology 2. Clinical postings 3. AETCOM	18 months	Phase 3 Part II

Annexure 4

Foundation Course- 2 weeks at start of course

Subjects/Contents	**Teaching hours**
Orientation Module including History of Indian Medicine	15
Skills Module	15
Community orientation module	5
Professional Development and Ethics Module (P&E) including Mental health	20
Enhancement of Language and Computer Skills Module including clinico-laboratory communication	10
Sports and Extra curricular Activities	15
Total	**80**

Annexure 5

Distribution of Subject Wise Teaching Hours for Phase -1 MBBS

Subject	Large group teaching	SGT/ Practical/ Tutorials/ Seminars	SDL	Total
Foundation Course				80
Anatomy	180	430	10	620
Physiology	130	305	10	445
Biochemistry *	82	157	10	249
Early Clinical Exposure (ECE)**	-	27	-	27
Community Medicine	20	20	-	40
Family adoption Program (FAP)	-	24	-	24
(AETCOM)***	-	26	-	26
Sports and extra-curricular activities	-	-	-	10
Total	**412**	**989**	**30**	**1521**

SGT: Small group teaching SDL: Self-directed learning

*Including Molecular Biology

**Minimum ECE hours. These hours are to be divided equally by anatomy, physiology & biochemistry.

***AETCOM module is a longitudinal programme.

Distribution of Subject Wise Teaching Hours for Phase-II MBBS

Subjects	Large group teaching	SGT/ Practicals/ Tutorials/ Seminars	Clinical Postings*	SDL	Total
Pathology	80	170	-	10	260
Pharmacology	80	170	-	10	260
Microbiology	75	143	-	10	228
Community Medicine	25	0	0	10	35
FAP	0	0	24		24
Forensic Medicine and Toxicology	12	25	-	08	45
Clinical Subjects	60		540	-	600
AETCOM	-	29	-	8	37
Sports, Yoga & extra-curricular activities	-	-	-	32	32
Final total	**332**	**537**	**564**	**88**	**1521**

SGT: Small group teaching SDL: Self-directed learning

Pl. note: *Clinical postings shall be for 3 hours per day, Monday to Friday.

There will be 15 hours per week for all clinical postings.

Distribution of Subject Wise Teaching Hours for MBBS Phase-III part 1.

Subject	Large group teaching	SGT/ Practicals/ Tutorials/ Seminars	SDL	Total
Electives	0	156	0	156
Gen. Medicine	20	30	10	60
Gen Surgery	20	30	10	60
Obstetrics & Gynecology	20	30	10	60
*Forensic Medicine and Toxicology	35	65*	20*	120
Community Med	50	80	20	150
FAP (Visits +log book submission)	-	26	10	36
Otorhinolaryngology (ENT)	30	50	20	100
Ophthalmology	30	50	20	100
Clinical posting*				648
AETCOM	0	19	12	31
Total	**205**	**536**	**132**	**1521**

*****Out of this, 21 Hours (07 days x 03 hours) must be utilised for demonstration of post mortem examinations

Pl. note: *Clinical postings shall be for 3 hours per day, Monday to Saturday.

There will be 18 hours per week for all clinical postings.

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Distribution of Subject wise Teaching Hours for Phase 3 part-2 MBBS

Subjects	Lectures	SGL	SDL	Total
General Medicine	110	185	40	335
General Surgery	90	153	30	273
Obstetrics and Gynecology	80	150	30	260
Pediatrics	50	70	30	150
Orthopedics	30	50	20	100
AETCOM	30	0	22	52
Dermatology, Venereology & Leprosy	13	17	10	40
Psychiatry	13	17	10	40
Radiodiagnosis	8	10	8	26
Anesthesiology	8	10	8	26
Clinical postings*				1116
TOTAL	**432**	**662**	**208**	**2418**

Pl. note: *Clinical postings shall be for 3 hours per day, Monday to Saturday.

There will be 18 hours per week for all clinical postings.
Extra hours may be used for preparation of NExT or SDL.

Annexure 6

Clinical Posting Schedules in weeks phase wise

Subjects	Period of training in weeks			**Total Weeks**
	Phase II	Phase III Part 1	Phase III Part 2	
Electives	0	4	0	4
General Medicine	8	4	12	24
General Surgery	6	6	12	24
Obstetrics & Gynaecology	6	4	12	22
Pediatrics	4	2	6	12
Community Medicine	4	4	0	8
Orthopaedics	0	2	6	8
Otorhinolaryngology	4	4	0	8
Ophthalmology	4	4		8
Psychiatry	0	2	4	6
Radio-diagnosis	0	0	2	2
Dermatology, Venereology & Leprosy	0	0	6	6
Anaesthesiology	0	0	2	2
Total	**36**	**36**	**62**	**134**

Annexure 7: Learner- Doctor programme (Clinical Clerkship)

Year of Curriculum	Focus of Learner-Doctor programme
Phase-I	Introduction to hospital environment, early clinical exposure, understanding perspectives of illness, family adoption program
Phase-II	History taking, physical examination, assessment of change in clinical status, communication and patient education, family adoption program
Phase-III Part -1	All of the above and choice of investigations, basic procedures and continuity of care
Phase-III Part -2	All of the above (except Family adoption programme) and decision making, management and outcomes

Annexure 8

Marks distribution for various subjects for University Annual Examinations

Phase of Course	Theory	Practicals	Passing criteria
Phase-I MBBS			
Anatomy- 2 papers	Paper **1**- 100	100	Mandatory to get 40% marks separately in theory and in practicals; and totally 50% for theory plus practicals.
	Paper 2 -100		
Physiology- 2 papers	Paper **1**- 100	100	
	Paper 2 -100		
Biochemistry- 2 papers	Paper **1**- 100	100	
	Paper 2- 100		
Phase-II MBBS			
Pathology - 2 papers	Paper 1- 100	100	
	Paper 2 -100		
Microbiology- 2 papers	Paper 1- 100	100	
	Paper 2- 100		
Pharmacology- 2 papers	Paper 1 -100	·100	
	Paper 2- 100		
Phase-III MBBS part 1			
Forensic Medicine and Toxicology- 1 paper	Paper 1 – 100	100	
Community Med- 2 papers	Paper 1 -100	100	
	Paper 2- 100		
Otorhinolaryngology	Paper-1 100	100	
Ophthalmology	Paper-1 100	100	
Phase-III MBBS part 2			
Medicine & allied	Paper 1- 100	100	
	Paper 2- 100		
Surgery & allied	Paper 1- 100	100	
	Paper 2- 100		
Obstetrics and Gynecology	Paper 1- 100	100	
	Paper 2- 100		
Pediatrics	Paper-1 100	100	

Medicine & allied Paper-2 to have Medicine 50%, Psychiatry 25% and Dermatology 25% questions.

Surgery & allied Paper-2 to have General Surgery 40%, Orthopedics 40%, Anesthesia 10% and Radiodiagnosis 10%.

Any further updates as per NEXT regulations.

Annexure 9

Suggested format for a Theory paper		
	Duration-3 hours	**100 marks**
	Type of question/ Number of questions	**Marks per question**
Q No 1	Scenario based MCQ/ 10-20	1-2
Q No 2	Long essay question/ ONE	10-12
Q No 3	Reasoning Questions/ FIVE	3
Q No 4	Short notes (applied aspects)/ FOUR All four subparts related to six integrated topics if subject is part of integrated modules. However, if a subject has less competencies in integrated module than atleast 2 sub-parts from integrated modules.	4-5
Q No 5	Short notes / THREE	5-6
Q No 6	Short notes / FOUR (one subpart of 5 marks from AETCOM)	4-5

Annexure 10- Phase I Alignment

Suggested Phase-I Alignment Table (Anatomy, Physiology & Biochemistry) (Topics written here are indicative and can be adjusted if required)			
Month	**Anatomy**	**Physiology**	**Biochemistry**
1	-General Anatomy -Lower Limb (LL)	General Physiology, Blood	Cell membrane and organelles, extracellular matrix, Chemistry of carbohydrates, amino-acid & proteins, Lab Safety and Biomedical Waste Management and Chromatography (Demo)
2	-LL/UL -General Embryology & Histology	Blood, N-M	Plasma protein, immunoglobulins, Enzymes, Hemoglobin structure and Hemoglobinopathies, Electrophoresis (Demo), Heme synthesis, Porphyria's, Hemecatabolism, iron metabolism (mineral) Bilirubin formation, Jaundice, colorimetry (Demo)
3	UL -General Embryology & Histology	ANS, CVS	Clinical Enzymology, Chemistry of lipids, and lipoprotein metabolism, carbohydrate metabolism, vitamins, Estimation of Protein and albumin
4	-Abdomen -Related Systemic Embryology & Histology	GIT, Renal	Vitamins, Nutrition, Liver Function Tests, Renal Function Tests, acid-base balance and its disorders, water and electrolyte normal and abnormal analysis of urine(DOAP), Estimation of Urea, creatinine
5	-Abdomen,Pelvis -Related Systemic Embryology & Histology	GIT (contd.), Repro.	Metabolism of proteins and their metabolic disorders, Metabolism of carbohydrates and their metabolic disorders, Diabetes mellitus, Electron transport chain and oxidative phosphorylation, Xenobiotics, Estimation of Glucose.
6	-Thorax -Related systemic Embryology & Histology	Repro (contd.), RS	Metabolism of lipids (remaining) and disorders, Metabolism of proteins, minerals, vitamins, Reproductive Hormones, Prenatal screening, new born screening.
7	H & N–I -Related Systemic Embryology & Histology, Genetics	Endocrine (Neck region), CNS	Hormone Biochemistry; Tumour markers and, Thyroid Function Tests, Adrenal Function tests, Free radicals, and antioxidants
8	H & N–II -Related Systemic Embryology & Histology, Genetics	CNS contd , Special senses	Purine and pyrimidines metabolism, gout, purine salvage pathway, replication, DNA damage and repair mechanism, transcription, translation, post-translational modifications, protein synthesis inhibitors, genetic code, and mutations, estimation of uric acid
9	- Neuroanatomy -Related Systemic Embryology & Histology	CNS (Contd.) Integrated physiology	Molecular biology techniques and Miscellaneous.

Annexure 11- Phase II Alignment

	Pathology	**Microbiology**	**Pharmacology**
1st month	Gen. Path	Gen. Micro, Communication and Ethics(14 competencies)	Gen. Pharm
2nd month	Gen. Path	Gen. Micro, Communication and Ethics(14 competencies)	Gen. Pharm
3rd month	Inflammation Immunology HIV	Immunology and Immunological Disorders (8 competencies)	(ANS/PNS) NSAIDs
4th month	Immunology	Immunology and Immunological Disorders	Immunosuppressants CVS
	CVS	CVS & Bloodstream infections (1.5 months)	
1st Internal Assessment			
5th month	CVS Hematology	CVS & Bloodstream infections (1.5 months)	CVS Blood
6th month	Respiratory System (2-3 weeks)	Respiratory System (2.5 weeks) Tb	Chemo
7th month	Respiratory system	CNS 1.5 weeks	Respiratory System TB (7 hours)
	CNS 2 hours Kidney		CNS 4weeks
2nd Internal Assessment			
8th month	Kidney Genito-urinary 2 weeks	Genito-urinary and STI 2 wks GIT Hepatobiliary	Chemotherapy
9th month	GIT Hepatobiliary	GIT Hepatobiliary	GIT
10th month	Bone Breast Skin, eye, joints Endocrine	Musculoskeletal system, Skin and Soft Tissue Infections (2 weeks) Zoonotic & Miscellaneous Infections (2 weeks) HAI and Antimicrobial Stewardship Hospital Infection Control	Drugs on skin, ocular Endocrine
3rd Internal Assessment/ Pre University			
11th month	**Phase 2 University Exam**		

Annexure 12-FAMILY ADOPTION PROGRAM

CURRICULUM FOR FAMILY ADOPTION PROGRAMME (FAP)

The National Medical Commission (NMC) envisages the FAP as an opportunity for the Institute(s) to discharge its social responsibility and as a critical platform to facilitate *Authentic learning* of the under-graduate students to sensitize them with the real-life challenges of working for the Universal health coverage (UHC). The FAP will present an opportunity for the students to experience the health inequities and understand the social factors contributing to it.

The FAP is expected to complement the other Competency-Based Medical Education (CBME) reforms e.g., posting of interns in the public health facilities under the Compulsory Rotating Medical Internship (CRMI) and the District Residency Program (DRP) for producing socially-responsive competent Indian Medical Graduates who would contribute for the cause of reducing inequities in health and society in the future. Institute(s) should leverage collaboration and partnership with the community and the public health care delivery system for effective implementation of the FAP so as to serve the larger purpose of the CBME reforms in the country.

TARGETS TO BE ACHIEVED BY STUDENTS:

Phase 1:

1. Rapport building and connect with the families
2. Learning communication skills and inspire trust building amongst families
3. Understand the dynamics of community set-up of that region
4. Mobilize families for participation in Screening programs
5. Undertake detailed family study and prepare the family diagnosis to identify diseases/ ill-health/ malnutrition of allotted families/ risk factors / scope for health promotion
6. Formulate objectives to be achieved for each family

Phase 2:

1. Continue active involvement to become the first doctor /reference point of the family by continued active interaction
2. Ensure follow-up of members from adopted families for vaccination, growth monitoring and promotion, menstrual hygiene, IFA prophylaxis, health lifestyle adoption, nutrition, vector control measures, compliance to medications etc.
3. Work collaboratively with adopted families to achieve the formulated objectives
4. Inform families about ongoing government sponsored health related programs
5. Ensure appropriate referral of family members considering their choice for additional or annual screening at higher health facilities.

Phase 3:

1. Work collaboratively with adopted families to achieve the formulated objectives
2. Observation of services delivered at the community level during Village Health Nutrition Days (VHND), Community-based events (CBEs), Health and Wellness Centres (HWC) camps under the different national health program
3. Build understanding regarding work of frontline workers (ANM, ASHA/USHA, AWW, MPW) through interaction
4. Build understanding around intersectoral action for health through Local self-governing bodies, NGOs, SHGs etc for health promotion
5. Undertake short term action projects for improving health in the adopted families or community
6. Analysis of their own involvement and impact on improving the health conditions in the adopted families

Final visit to have last round of active interaction with families - prepare a report to be submitted to department addressing:

1. Improvement in overall health of the family
2. Immunization

3. Sanitation,
4. De-addiction
5. Whether healthy lifestyles like reading good books. Sports/yoga activities have been inculcated in the house-holds
6. Improvement in anaemia, tuberculosis control
7. Health awareness
8. Any other issues
9. Role of the student in supporting family during illness / medical emergency
10. Social responsibility in the form of environment protection programme in form of plantation drive (medicinal plants/trees) cleanliness and sanitation drive with the initiative of the medical student

Phase wise competencies to be achieved through the FAP

Professional year and topics for visit	**Competency**	**Objectives**	**Suggested T-L methods**	**Suggested Assessment methods**	**Teaching Hours**
First year Visit 1 – Rapport building with the Families and Orientation Socio-demographic and Socio-economic profile Visit 2 – Environmental health	Collect demographic profile of allotted families, take history and conduct clinical examination of all family members	By the end of this visit, students should be able to compile the basic demographic profile of allocated family members and formulate objectives for each family	Family survey, Screening camps Field visit clinics	Community case presentation. OSPE, Observation, FAP logbook Multi-source feedback Reflections Case studies	Total 24 hours [A minimum of 4 visits of full day of around 6 hours] OR [If 3 hours visit then 8 visits to be conducted]
	Mobilize the adopted family members for participation in screening camps and coordinate treatment of adopted family under overall guidance of mentor	By the end of this visit, students should be able to report the basic health profile and treatment history of allocated family members	Screening camps Field visit clinics PLA techniques (sorting, ranking etc)	Community case presentation. OSPE, Observation, FAP logbook Multi-source feedback Reflections Case studies	

Drinking Water supply, Sanitation and Vector control Visit 3 – Individual health profile including Anthropometry Visit4 – Addictions Tobacco, Alcohol, Screen addiction and other addictions	Maintain communication and follow-up of remedial measures	By the end of this visit, students should be able to provide details of communication maintained with family members for follow up of treatment and suggested remedial measures.	Family survey, Screening camps Field visit clinics Reporting of follow up visits.	Community case presentation. OSPE, FAP logbook based verification of competency, Multi-source feedback Reflections	
	Take part in health promotion, environment protection and sustenance activities	By the end of this visit, students should be able to report the activities undertaken for health promotion, environment protection and sustenance like tree plantation, herbal plantation activities conducted in the community	Participation in and process documentation of activities (NSS activities) along with reporting of case studies	Community case presentation. OSPE, Observation, FAP logbook Multi-source feedback Reflections Case studies	
Second year Visit 5 – Healthy Lifestyle Dietary assessment,	Take history and conduct clinical examination of all family members	By the end of this visit, Students should be able to compile the updated medical history of family members through family follow-up	Family survey, Field visit clinics Referral and follow-uo	Community case presentation. OSPE, Observation, FAP logbook Multi-source feedback Reflections Case studies	Total 24 hours [A minimum of 4 visits of full day of around 6 hours] OR

Physical activity and Exercise Visit 6 – Micronutrient deficiencies - Nutritional anemia, Iodine deficiency disorders Care of under-5 children Visit 7 – Feeding, vaccination, HBYC Maternal health Visit 8 – Care of Pregnant and Lactating mothers	Facilitate checkup and/or referral of adopted family under overall guidance of mentor	By the end of this visit, students should be able to report the details of clinical examination and investigations like HB %, blood group urine routine and blood sugar or any other investigation along with treatment history, compliance to treatment, of allocated family members	Field visit clinics Referral Field visit clinics Reporting of follow up visits.	Community case presentation. OSPE, FAP logbook Case studies Multi-source feedback	[If 3 hours visit then 8 visits to be conducted]
	Maintain communication and follow-up of remedial measures	By the end of this visit, students should be able to provide details of communication maintained with family members including information about National programs provided. Students should also be able to follow up on treatment and suggested remedial measures under the guidance of a mentor. Documentation of referral in logbook	Family survey, Screening camps Field visit clinics Reporting of follow up visits.	Community case presentation. OSPE, FAP logbook based verification of competency, Multi-source feedback Reflections	
Third year Visit 9 – Communicable diseases – Tuberculosis, Influenza and others Visit 10 –	Take history and conduct clinical examination of all family members and facilitate health check-up if required	By the end of this visit, students should be able to maintain follow-up with the families and update the medical history of family members	Family survey, Field visit clinics Referral and follow-up	Community case presentation. OSPE, Observation, FAP logbook Multi-source feedback Reflections Case studies	Total 36 hours [A minimum of 6 visits of full day of around 6 hours] OR [If 3 hours visit then

Non-communicable diseases – HTN, DM and others Visit 11 – Adolescent health / School health Menstrual hygiene, Life skills Visit 12 – Healthy ageing Health care of the Elderly Visit 13 – Mental health Healthy coping strategies and Resilience Visit 14 – Well-being of the Families Final visit and Report submission	Maintain communication and follow-up of remedial measures	By the end of this visit, students should be able to provide details of communication maintained with family members and collaborative efforts undertaken with family members for improving their health.	Family survey, Field visit clinics Referral and tracking Reporting of follow up visits.	Community case presentation. OSPE, Observation, FAP logbook based verification of competency, Multi-source feedback Reflections	12 visits to be conducted]
	Counsel the family members of allotted families and analyze the health trajectory of adopted family under overall guidance of mentor	By the end of this visit, students should able to analyze and report the findings of short term action projects and its effect on health trajectory at individual Family and community level	Participation in and process documentation of activities (NSS activities) along with reporting of photographic evidences. Small group discussion (report of the health trajectory of adopted family)	Community case presentation. OSPE, Logbook based verification of competency. Observation Viva-voce Multi-source feedback Reflections	
	Work as a member of Health Team and facilitate intersectoral action for health	By the end of this visit, students should able to report the role of various frontline functionaries' delivery primary health care and Local self-governing bodies, NGOs, SHGs etc for health promotion	Observation and reporting of events Exposure visits Interaction with frontline functionaries	Logbook based verification of competency, Observation Viva-voce Multi-source feedback Reflections	

LOG BOOK FOR FAMILY ADOPTION PROGRAM

(To be modified by the Institute as per their requirement)

Institute:

University:

Name of the Student:

Roll No: **Batch:**

Address of Community for FAP:

Number of Adopted Families:

Names of Head of Household of Adopted families:

Dates of Screening Camp: _____

Name of Faculty Guide/Mentor

Names of PGs/SRs Guide/Mentor

Names of Para-medical staff Guide/Mentor

Annexure 13

DRAFT GUIDELINES FOR MANPOWER REQUIREMENT FOR RESEARCH FACILITIES IN A MEDICAL COLLEGE

Research labs may be under following categories:

1. Molecular lab
2. Stem cell research lab
3. Cytogenetics lab
4. HLA and tissue typing research lab
5. Integrative Research lab

Applied Clinical research for organ perfusion, cancer research, in vitro fertilization, etc. can be under any of the above research facilities.

For integrative research lab, qualified faculty from Yoga/ Ayurvedic/ Siddha etc can also be employed and man-power may be selected as per AYUSH guidelines.

MAN POWER

(1) Lab Director-post-1

Minimum Qualifications required**:**

MD Path/ MD Microbiology/ MD Transfusion Medicine/ MD Biochemistry/

Faculty with PhD/ MSc PhD may be taken if exceptional in research.

Lab work: 10 years experience

Lab research related publications- minimum 10 in last 10 years

(2) Lab Supervisor- post-1 (per research facility)

Minimum Qualifications required**:**

MD Path/ MD Microbiology/ MD Transfusion Medicine/ MD Biochemistry

Faculty with PhD (Medical subject) will be preferred

or MSc in life sciences with PhD from Medical college

Lab work: 7 years experience

Lab research related publications- minimum 5 in last 5 years

(3) Senior Scientific Research Officer- posts- 1 or more (per research facility)

Minimum Qualifications required**:**

PhD with MD Path/ MD Microbiology/ MD Transfusion Medicine/ MD Biochemistry / PhD in medical college or MSc in life sciences with PhD from medical college

Lab work: 4years experience

Lab research related publications- minimum 3 in last 3 years

(4) **Junior Research Officer**-posts- 1 or more (per research facility)

Minimum Qualifications required**:**

MD Path/ MD Microbiology/ MD Transfusion Medicine/ MD Biochemistry or Diploma in Clinical Pathology/ MSc in life sciences, PhD scholar/ Postdoc fellow

Diploma holder in any branch may pursue PhD if experience / research inclinations proved for minimum of 1 year. They can be enrolled for integrated Master's PhD course.

Lab work: 1 year experience

Lab research related publications- preferably 1 in last 2 years

(5) Laboratory Technicians- Posts- minimum 2

Minimum Qualifications required**:** BSc/ MSc, in life sciences including Biotechnology, DMLT

(6) Data entry operator/ Clerk -1 (minimum)

Minimum Qualifications required**:**

Experience:

(7) **Store keeper** -1 (minimum)

Minimum Qualifications required**:Graduate**

Experience: 5 years

(8) **Biostatistician- 1**(minimum)-Asst Professor/ Above

Experience: 5 years

(9) Lab attendant

(10) Peon/ Multi-task worker

(11) **Clinical Monitors-**

Any MBBS or above with research inclination

(12) Social worker/ MSW with applied research inclinations

Annexure 14

Guidelines regarding admission of students with “Specified Disabilities” under the Rights of Persons with Disabilities Act, 2016 with respect to admission in MBBS.

Note 1. The “Certificate of Disability” shall be issued in accordance with the Rights of Persons with Disabilities Rules, 2017 notified in the Gazette of India by the by the Ministry of Social Justice and Empowerment [Department of Empowerment of Persons with Disabilities (Divyangjan)] on 15th June 2017.

2. The extent of “specified disability” in a person shall be assessed in accordance with the “Guidelines for the purpose of assessing the extent of specified disability in a person included under the Rights of Persons with Disabilities Act, 2016 (49 of 2016)” notified in the Gazette of India by the Ministry of Social Justice and Empowerment [Department of Empowerment of Persons with Disabilities (Divyangjan)] on 5th January 2018.

3. The minimum degree of disability should be 40% (benchmark disability) in order to be eligible for availing reservation for persons with specified disability.

4. **The term 'Persons with disabilities' (PwD) is to be used instead of the term ‘Physically Handicapped' (PH).**

Sno	Disability Type	Benchmark Disabilities	Specified Disability	Disability Range		
				Eligible for Medical Course, Not Eligible for PH Quota	Eligible for Medical Course, Eligible for PH Quota	Not Eligible for Medical Course
1	Physical Disabilities	A.Locomotor Disability / (Specified Disability a-f)	a. Leprosy cured person	Less than 40% disability	40-80% : Persons with more than 80% disability may also be allowed; but after their selection, their functional competency will be determined with the aid of assistive devices.	More than 80%
			b. Cerebral Palsy			
			c. Dwarfism			
			d. Muscular Dystrophy			
			e. Acid attack victims			
			f. Others			
		B. Visual Impairment	a. Blindness	Less than 40% disability (i.e. Category '0(10%)', 'I(20%)' & 'II(30%')	—	Equal to or More than 40% Disabilitiy (i.e. Category III and above)
			b. Low vision			
		C. Hearing impairment	a. Deaf	Less than 40% Disability	—	Equal to or more than 40% Disability
			b. Hard of hearing			

Sno	Disability Type	Benchmark Disabilities	Specified Disability	Disability Range		
				Eligible for Medical Course, Not Eligible for PH Quota	Eligible for Medical Course, Eligible for PH Quota	Not Eligible for Medical Course
		D. Speech & language disability	a. Organic/ neurological causes			
2	Intellectual disability		a. Specific learning disabilities (Perceptual disabilities, Dyslexia, Dyscalculia, Dyspraxia & Developmental aphasia)	Less than 40% Disability	Equal to or more than 40%	—
			b.Autism spectrum disorders	Absence or Mild Disability, Asperger syndrome (disability of 40-60% as per ISAA) where the individual is deemed fit for MBBS course by an expert panel	Currently not recommended due to the above-mentioned lack of objective method to establish presence and extent of mental illness. However, the benefit of reservation/quota may be considered in future after developing better methods of disability assessment.	Equal to or more than 60% disability or presence of cognitive/intellectual disability and/or if the person is deemed unfit for perusing MBBS course by an expert panel.
3	Mental behaviour		a. Mental illness	Absence or mild Disability: less than 40% (under IDEAS)	Currently not recommended due to the above-mentioned lack of objective method to establish presence and extent of mental illness. . However, the benefit of reservation/quota may be considered in future after developing better methods of disability assessment.	Equal to or more than 40% disability or if the person is deemed unfit to perform his/her duties. Standards may be drafted for the definition of "fitness to practice medicine", as are used by several institutions of countries other than India.
4	Disability caused due to	Disability due to Chronic Neurological Conditions	a. Multiple Sclerosis	Less than 40% Disability	40-80%	More than 80%
			b. Parkinsonism			
		ility due to Blood	a. Haemophilia	Less than 40% Disability	40-80%	More than 80%

Sno	Disability Type	Benchmark Disabilities	Specified Disability	Disability Range		
				Eligible for Medical Course, Not Eligible for PH Quota	Eligible for Medical Course, Eligible for PH Quota	Not Eligible for Medical Course
			b.Thalassemia			
			c. Sickle cell disease			
5	Multiple disabilities including deaf blindness		a. Combination of above	Combining Formula as notified by the Govt. $\frac{a + b\ (90-a)}{90}$ (where a= higher value of disability % and b=lower value of disability % as calculated for different disabilities) is recommended for computing the disability arising when more than one disabling condition is present in a given individual. This formula may be used in cases with multiple disabilities, and recommendations regarding admission and/or reservation made as per the specific disabilities present in a given individual		

••• That by virtue of the order dated 18.05.2023 passed by the Hon'ble Supreme Court of India in WP (C) no. I093 of 2023 titled Vishal Gupta Vs UOI &Ors., the Under Graduate Medical Education Board (UGMEB), an autonomous board under National Medical Commission. constituted an expert committee. Accordingly, on l4th July, 2023, the expert meeting was held and the issues related to the review of guidelines specifically with respect to Specific learning disabilities (SLD), Autism spectrum disorders (ASD) and Mental illness were discussed in detail. Thereafter recommendations based on the discussions held in the meeting were received in the commission and such recommendations were considered by UGMEB.

Mentor
Mentee Log Book
for MBBS Students

Name of Student : _____

Year of Admission : _____

Mobile No of Mentee : _____

E-mail ID of Mentee : _____

Name of Mentor Dr : _____

Dept of Mentor : _____

Mobile No of Mentor : _____

VISION

MGM Institute of Health Sciences aims to be a top ranking centre of Excellence in Health Science Education, Health Care aand Research.

MISSION

- Students graduating from the Institute will have the required skills to deliver the quality health care to all the sections of the society with compassion and benevolence, without prejudice or discrimination at an affordable cost.

- As a Research Centre, it shall focus on finding better, safer and affordable ways of diagnosing, treating and preventing diseases. In doing so, it will maintain highest ethical standard.

Mentee Details

Student Roll Number: _____ Date of Birth: _____

Age: _____ Mobile Number: _____ Blood Group: _____

Contact Number (Local): _____

Students Residential Address (Local): _____

_____ Pin Code: _____

If residing out side Campus in rented house:
Owner's Name & Address: _____

_____ Contact Number: _____

Name of Local Guardian (If Any) with Phone Number: _____

Father's Name: _____ Occupation: _____

Father's Mobile Number & E Mail ID: _____; _____

Mother's Name: _____ Occupation: _____

Mother's Mobile Number & E Mail ID: _____; _____

Residential Address (Permanent): _____

City: _____ Pin Code_____

State: _____ Country: _____

Significant Medical History (If any) _____

Special Areas of interests & Important Achievements if any - Academic/ Sports / Cultural/ Hobbies etc:

_____

_____

_____

_____

Signature of Student: _____

INTRODUCTION

Medical studies have always been subjected to a combination of various challenges and stresses. These have included difficulties emerging in the clinical, academic, social and personal functioning of the student who is often found in the deep without having developed an adequate ability to remain afloat, leave alone being in a position to enjoy and gainfully learn from the journey. This challenges our intention of producing Visionary leaders in the field of Medical Education, Care and Research through fostering enabling relationships between faculty and students. Evidence suggests that structured Mentoring programmes are extensively used in undergraduate education and in honing professional skills (Buddeberg-Fisher b. and Herta K, 2006).

Mentorship provides support for the student to seek and receive guidance from the more experienced and empathetic faculty who, having gone through the process themselves, are able to bring to bear a different, wider, deeper and perhaps a healthier perspective to the daily experiences which tend to drown the student. Mentoring can be described as `a voluntary relationship, typically between two individuals, in which the mentor is usually an experienced, highly regarded, empathic individual, often working in the same organization, or field, as the mentee; the mentor, by listening and talking with the mentee in private and in confidence, guides the mentee in the development of his or her own ideas, learning, and personal and professional development'(Bligh, 1999). It no doubt helps students to succeed in their careers (Stamm Martina and Barbara Buddeberg-Fisher, 2011)

Mentorship program of any Institution has an individualistic flavor influenced partly by the predominant value base of the Institution and of its members as also by the personalities of the mentor and the mentee. All senior teaching faculties of MGM MCHA will act as mentors and guide students throughout MBBS program. Each mentor will have 1 student from each batch i.e. 5 students and the mentor will remain constant for the full duration of a student in the medical college of 5 years.

MGM MCA MENTORING PROGRAM
Important Information about Mentoring

I - ROLE OF MENTORS:

Understand the socioeconomic status, family structure and educational background and the aspiration of the mentees before proceeding with the mentoring process.

II - ACTIONS TAKEN BY MENTOR WITH THE MENTEE:

[1] Observe [2] Analyze [3] Discuss [4] Suggest transformation [5] Review & reflect [6] Progress

Focus on the following (the heads are self explanatory):

(A) Development of Personality

(B) Academic progress

(C) Development of a good doctor

Focus on the skills developed/ to be developed – clinical case taking and examination skills, diagnostic skills:

(i) Thinking Skills – for Analysis/Synthesis

(ii) Listening /Receiving Skills

(iii) Effective Communication Skills

(iv) Life Skills

III - CAUTIONS

It may be essential to keep in mind a few general cautionary advises.

a. Mentoring is not therapy. Mentors should guide and encourage their mentees to meet the respective person who can best help them.

b. Confidentiality will be maintained at all cost.

c. Intra-faculty Communication as per need of situation will enhance effectiveness of this program.

d. Regularity of sessions is important for maximum impact.

IV – Advantages & Important Instructions to Students

a. The student gets a constant Friend & Guide for the period that he/ she spends in the medical college and who helps him/ her to learn and engage in a meaningful way to the various inputs and people around. This support is available in the personal and professional areas. The student gets guidance in career advancement also in terms of career guidance.

b. Students will get 1 day attendance for every mentor- mentee meeting that takes place for that academic year. Cancelled

c. The mentor mentee meeting log book should be complete for that academic year.

d. Students with completed log book will be allowed to appear for the University exam of that academic year.

SOP of Mentoring Program in MGM

ENROLLMENT OF STUDENTS:-

1. All new students will be enrolled under a mentor when they enter the college.
2. Students will continue with the same mentor for the Entire duration of MBBS Program.
3. A mentor will have mentees from different semester.
4. First Mentor – Mentee introduction/ meeting for the 1st MBBS (new admissions) will be held on the day of Induction program & Parent – Teachers Meeting. Parents will meet the mentors of their wards.

MENTOR – MENTEE MEETINGS:-

5. Mentor – Mentee meetings will take place at least once every month.
6. The mentor – mentee meeting may be taken more frequently for a specific mentee and for a specific period in the prg as per the need of the mentee and discretion of the mentor.
7. Meetings will take place in the medical college campus and will be one to one. Under exceptional circumstances like the student being on a long leave and unable to come personally, urgency of the situation etc this meeting can be conducted on phone. If so a remark "Telephonic meeting" should be entered in the report.
8. The meeting may cover the following points – Academic progress, Communication Skills, Life Skills, Inter Personal Issues and Other Issues including Personal, Family etc. This is a suggested list; the meeting may cover other areas/ issues depending on the felt need of the mentee and the discretion of the mentor.

MENTOR – MENTEE MEETINGS PLANNING & IMPLEMENTATION:-

9. Mentor – Mentee meetings will be held on the 1st or 3rd Saturdays of every month from 1 pm to 2 pm. The above given dates and time are suggestive. If not possible the meeting can take place at a mutually convenient date and within college time.
10. The tentative date/ time for the next meeting will be fixed by both in the ongoing meeting. For the first meeting mentees will call up or personally meet their respective mentors and fix the meeting time and date.
11. For subsequent meetings the mentee will contact their respective mentor 1 day prior to their scheduled meeting and confirm the meeting.

MENTOR – MENTEE MEETINGS DOCUMENTATION:-

12. In the row of Dt (dates) please write down the date in which the mentoring meeting was taken.
13. The gist of each meeting will be documented by the mentor and sign this document. The mentee will go through the doc and then affix his/ her signature too.

REPORTING:-

14. In case of any difficulties Mentor/ Mentees can contact the coordinator of the College Mentoring Prg in the IQAC Office.
15. Mentor to fill up the details at the end of each academic year and sign

Mentoring Program Meeting Report – I MBBS
Academic Year □□□□-□□

No.	Dt/ Time	Issues Discussed	Guidance/ Suggestions	Initials
				Mentor Mentee

No.	Dt/ Time	Issues Discussed	Guidance/ Suggestions	Initials

In case of "Additional" Meetings are required, please document them on pages 14 & 15

No. of Mentor - Mentee meetings in this academic year - ..... + Additional Meetings - .....

The Student was regular and has completed the Mentoring Program for the Academic year .....

Suggestions/ Planning for the next Academic Year - .....

.....

Signature of Mentor

Mentoring Program Meeting Report – II MBBS
Academic Year □□□□-□□

No.	Dt/ Time	Issues Discussed	Guidance/ Suggestions	Initials
				Mentor
				Mentee

No.	Dt/ Time	Issues Discussed	Guidance/ Suggestions	Initials

In case of "Additional" Meetings are required, please document them on pages 14 & 15

No. of Mentor - Mentee meetings in this academic year - ..... + Additional Meetings - .....

The Student was regular and has completed the Mentoring Program for the Academic year .....

Suggestions/ Planning for the next Academic Year - .....

.....

Signature of Mentor

Mentoring Program Meeting Report – III/I MBBS
Academic Year □□□□-□□

No.	Dt/ Time	Issues Discussed	Guidance/ Suggestions	Initials
				Mentor
				Mentee

No.	Dt/ Time	Issues Discussed	Guidance/ Suggestions	Initials

In case of "Additional" Meetings are required, please document them on pages 14 & 15

No. of Mentor - Mentee meetings in this academic year - ..... + Additional Meetings - .....

The Student was regular and has completed the Mentoring Program for the Academic year .....

Suggestions/ Planning for the next Academic Year - .....

.....

Signature of Mentor

Mentoring Program Meeting Report – III/II MBBS
Academic Year ■■■■-■■

No.	Dt/ Time	Issues Discussed	Guidance/ Suggestions	Initials
				Mentor
				Mentee

No.	Dt/ Time	Issues Discussed	Guidance/ Suggestions	Initials

In case of "Additional" Meetings are required, please document them on pages 14 & 15

No. of Mentor - Mentee meetings in this academic year - ..... + Additional Meetings - .....

The Student was regular and has completed the Mentoring Program for the Academic year .....

Suggestions/ Planning for the next Academic Year - .....

.....

Signature of Mentor

Mentoring Program Meeting Report – Documentation of Additional Meetings

No.	Dt/ Time	Issues Discussed	Guidance/ Suggestions	Initials
				Mentor
				Mentee

No.	Dt/ Time	Issues Discussed	Guidance/ Suggestions	Initials

Mentor – Mentee Summary					
Sr No.	Academic Year	No of Meetings	Additional Meetings	Total Meetings	Sign of Mentor
1					
2					
3					
4					
5					

Student Charter

A) Institution's responsibilities towards students

The institution shall

- Communicate its goals and objectives systematically and clearly to all students.
- Offer programmes that are consistent with its goals and objectives
- Offer a wide range of programmes with adequate academic flexibility
- Obtain feedback from students on the initiation and review and redesign programmes if and when necessary
- Facilitate effective running of the teaching learning programmes
- Implement a well-conceived plan for monitoring student progress continuously
- Ensure that the student assessment mechanism is reliable and valid
- Provide clear information to students about admission and completion requirements for all programmes, the free structure and refund policies, financial aid and student support services
- Ensure sufficient and well-run support services to all students
- Promote healthy practices

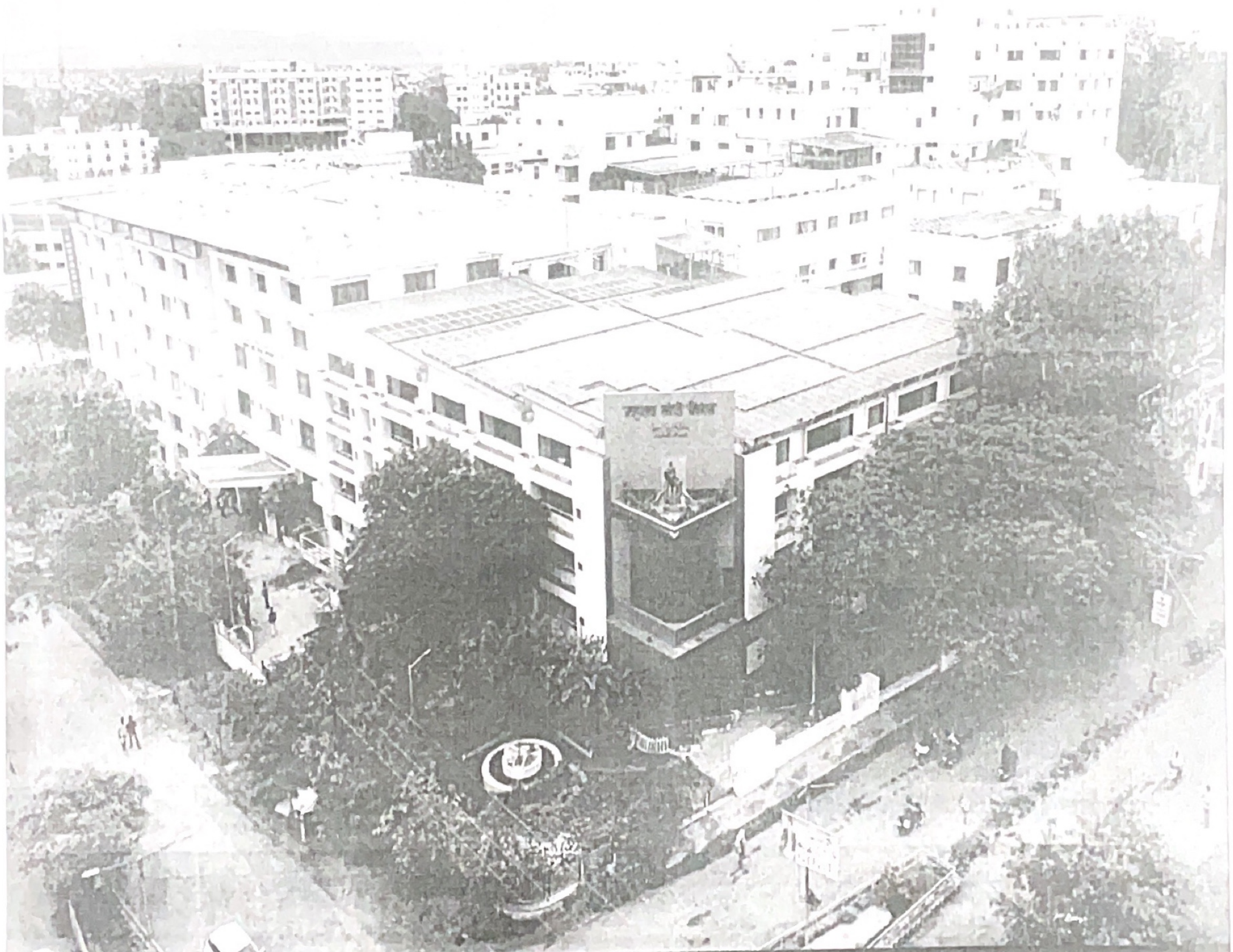
B) Student's responsibilities of learning

The student shall

- Appreciate the institutional goals and objectives and contribute to the realization of the same by participating in relevance institutional activities.
- Have a clear knowledge of the programmes, admission policies, rules and regulations of the institution
- Follow the time schedules, rules and regulations of the institution
- Undertake regular and intense study of learning materials
- Make optimum use of the learning resources and other support services available in the institution.
- Prepare for continuous internal assessment and term-end examinations
- Give feedback for system improvement
- Have faith and ability to pursue life long learning
- Live as worthy alumni of the institution.

"To Wipe Every Tear From Every Eye"

- Mahatma Gandhi



MGM MEDICAL COLLEGE & HOSPITAL

Gate No. 2 , MGM Campus, N-6, Cidco, Aurangabad, Maharashtra 431003

Mentor Report format.

Department of----------

MGM Medical Collage, Navi Mumbai

(Departmental Logo)

Minutes of Mentor-Mentee Meeting

1. **Year** :
2. **Batch** :
3. ~~Date~~ Month **of meeting** :
4. **Total numbers. of students attended** :
5. Name of Mentors :

Sr. no.		Issues Raised	Action taken at department level	~~Any compliance from previous meeting~~ Action Required at Institution Level
1	Teaching- Learning & Evaluation			
2.	Library			
3.	Class room/ College/Infrastructure			
4.	Mess/ Canteen/food			
5.	Hostel			
6.	Any other matter			

DR. Kattimani

for Review, if needed

Sent 15/12

Signature of HOD with Seal

Mahatma Gandhi Mission

MEDICAL COLLEGE

Sector-1, Kamothe, Navi Mumbai - 410 209.

PROFORMA FOR MENTORSHIP PROGRAMME

Programme - _____/Semester - _ _ _ _ _ _ _ _/Year - _ _ _ _ _

ROLL NO:

Photo

Name Of Student :	
Name Of Mentor :	
Year &Batch:	
Mobile No. : **Email ID of Student :**	
Residence Status :	**Day Scholar / Hostelite**
Student Local Address:	
Local Guardian Address: **Contact No:** **Email ID :**	
Address of Parent, Mobile No. & Email ID :	

It is necessary to have meeting with allotted students once in a month and keep the records of any significant problem of students in the remark column

MGM INSTITUTE OF HEALTH SCIENCES

(Deemed to be University u/s 3 of UGC Act, 1956)

Grade 'A' Accredited by NAAC

Sector-01, Kamothe, Navi Mumbai - 410209

Tel 022-27432471, 022-27432994, Fax 022-27431094

E-mail- registrar@mgmuhs.com Website : www.mgmuhs.com