ST JOSEPH UNIVERSITY

KANYAKUMARI MEDICAL MISSION RESEARCH CENTRE

ST. DEVA SAHAYAM NAGAR, MUTTOM,

KANYAKUMARI DISTRICT – 629202

Syllabus for

PHASE-I

MBBS

BACHELOR OF MEDICINE AND BACHELOR OF SURGERY

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 I 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 II 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

Anatomy, Physiology and Biochemistry

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.

Volume I-2024

COMPETENCY BASED UNDERGRADUATE CURRICULUM FOR THE INDIAN MEDICAL GRADUATE

2024

National Medical Commission
Pocket-14, Sector- 8, Dwarka
New Delhi 110 077

Contents Volume I

ANATOMY

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
Anatomy (Topics = 82, Competencies = 413)							
Topic 1: Anatomical terminology -		**Number of Competencies (2)**			**Number of competencies for certification: (NIL)**		
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/ skills assessment	
AN1.2	Describe composition of bone and bone marrow	K	KH	Y	LGT	Written/ viva	
Topic 2: General features of bones & Joints		**Number of Competencies (6)**			**Number of competencies for certification:** voce **(NIL)**		
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		**Number of Competencies (3)**			**Number of competencies for certification: (NIL)**		
AN3.1	Classify & describe muscle tissue according to structure, size, shape, region & action	K	KH	Y	LGT, Demonstration	Written/ Viva voce	

Number	**COMPETENCY The student should be able to**	**Predominant Domain K/S/A/C**	**Level K/KH/SH/P**	**Core (Y/N)**	**Suggested Teaching Learning method**	**Suggested Assessment method**	**Number required to certify P**
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		**Number of Competencies (5)**			**Number of competencies for certification: (NIL)**		
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		**Number of Competencies (8)**			**Number of competencies for certification: (NIL)**		
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	

Number	**COMPETENCY** **The student should be able to**	**Predominant Domain K/S/A/C**	**Level K/KH/SH/P**	**Core (Y/N)**	**Suggested Teaching Learning method**	**Suggested Assessment method**	**Number required to certify P**
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		**Number of Competencies (3)**			**Number of competencies for certification:**		
(NIL)							
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		**Number of Competencies (8)**			**Number of competencies for certification:**		
(NIL)							
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	
AN7.8	Describe differences between sympathetic and spinal ganglia	K	KH	N	LGT, Demonstration	Written	
Topic 8: Features of individual bones (Upper Limb)		**Number of Competencies (4)**			**Number of competencies for certification: (NIL)**		
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	

Number	**COMPETENCY** **The student should be able to**	**Predominant Domain K/S/A/C**	**Level K/KH/SH/P**	**Core (Y/N)**	**Suggested Teaching Learning method**	**Suggested Assessment method**	**Number required to certify P**
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		**Number of Competencies (3)**			**Number of competencies for certification: (NIL)**		
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		**Number of Competencies (13)**			**Number of competencies for certification: (NIL)**		
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	
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	

Number	**COMPETENCY** **The student should be able to**	**Predominant Domain K/S/A/C**	**Level K/KH/SH/P**	**Core (Y/N)**	**Suggested Teaching Learning method**	**Suggested Assessment method**	**Number required to certify P**
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	

Number	**COMPETENCY** **The student should be able to**	**Predominant Domain K/S/A/C**	**Level K/KH/SH/P**	**Core (Y/N)**	**Suggested Teaching Learning method**	**Suggested Assessment method**	**Number required to certify P**
AN10.13	Explain anatomical basis of Injury to axillary nerve during intramuscular injections	K	KH	Y	LGT	Viva voce	
	Topic 11: Arm & Cubital fossa	**Number of Competencies (6)**			**Number of competencies for certification: (NIL)**		
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		**Number of Competencies (15)**			**Number of competencies for certification: (NIL)**		
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	

Number	**COMPETENCY** **The student should be able to**	**Predominant Domain K/S/A/C**	**Level K/KH/SH/P**	**Core (Y/N)**	**Suggested Teaching Learning method**	**Suggested Assessment method**	**Number required to certify P**
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	

Number	**COMPETENCY** **The student should be able to**	**Predominant Domain K/S/A/C**	**Level K/KH/SH/P**	**Core (Y/N)**	**Suggested Teaching Learning method**	**Suggested Assessment method**	**Number required to certify P**
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		**Number of competencies: (8)**			**Number of competencies for certification: (NIL)**		
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	

Number	**COMPETENCY** **The student should be able to**	**Predominant Domain K/S/A/C**	**Level K/KH/SH/P**	**Core (Y/N)**	**Suggested Teaching Learning method**	**Suggested Assessment method**	**Number required to certify P**

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)		**Number of Competencies (4)**			**Number of competencies for certification: (NIL)**		
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		**Number of Competencies (5)**			**Number of competencies for certification: (NIL)**		
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	

Number	COMPETENCY The student should be able to	Predominant Domain K/S/A/C	Level K/KH/SH/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P
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		**Number of Competencies (6)**			**Number of competencies for certification: (NIL)**		
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		**Number of Competencies (3)**			**Number of competencies for certification: (NIL)**		
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	

Number	COMPETENCY The student should be able to	Predominant Domain K/S/A/C	Level K/KH/SH/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P
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		**Number of Competencies (7)**			**Number of competencies for certification: (NIL)**		
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		**Number of Competencies (7)**			**Number of competencies for certification: (NIL)**		

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	

Number	**COMPETENCY** **The student should be able to**	**Predominant Domain K/S/A/C**	**Level K/KH/SH/P**	**Core (Y/N)**	**Suggested Teaching Learning method**	**Suggested Assessment method**	**Number required to certify P**
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	Number of Competencies (10)			Number of competencies for certification: (NIL)		
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	

Number	**COMPETENCY** **The student should be able to**	**Predominant Domain K/S/A/C**	**Level K/KH/SH/P**	**Core (Y/N)**	**Suggested Teaching Learning method**	**Suggested Assessment method**	**Number required to certify P**
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		**Number of Competencies (11)**			**Number of competencies for certification: (NIL)**		

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	
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	

Number	**COMPETENCY** **The student should be able to**	**Predominant Domain K/S/A/C**	**Level K/KH/SH/P**	**Core (Y/N)**	**Suggested Teaching Learning method**	**Suggested Assessment method**	**Number required to certify P**
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	**Number of Competencies (7)**			**Number of competencies for certification: (NIL)**		
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	

Number	**COMPETENCY** **The student should be able to**	**Predominant Domain K/S/A/C**	**Level K/KH/SH/P**	**Core (Y/N)**	**Suggested Teaching Learning method**	**Suggested Assessment method**	**Number required to certify P**
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		**Number of Competencies (6)**			**Number of competencies for certification: (NIL)**		
AN23.1	Describe & demonstrate the external appearance, relations, 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	

Number	**COMPETENCY** **The student should be able to**	**Predominant Domain K/S/A/C**	**Level K/KH/SH/P**	**Core (Y/N)**	**Suggested Teaching Learning method**	**Suggested Assessment method**	**Number required to certify P**
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	
AN23.6	Describe the splanchnic nerves	K	KH	N	LGT	Written	
Topic 24: Lungs & Trachea		**Number of Competencies (6)**			**Number of competencies for certification: (NIL)**		
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	**Number of Competencies (9)**			**Number of competencies for certification: (NIL)**		
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	

Number	**COMPETENCY** **The student should be able to**	**Predominant Domain K/S/A/C**	**Level K/KH/SH/P**	**Core (Y/N)**	**Suggested Teaching Learning method**	**Suggested Assessment method**	**Number required to certify P**
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		**Number of Competencies (7)**			**Number of competencies for certification: (NIL)**		
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	

Number	**COMPETENCY** **The student should be able to**	**Predominant Domain K/S/A/C**	**Level K/KH/SH/P**	**Core (Y/N)**	**Suggested Teaching Learning method**	**Suggested Assessment method**	**Number required to certify P**
AN26.7	Describe & demonstrate the features of the 7th cervical vertebra	K,S	SH	N	LGT, Demonstration	Viva voce	
Topic 27: Scalp		**Number of Competencies (2)**			**Number of competencies for certification: (NIL)**		

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	**Number of Competencies (10)**			**Number of competencies for certification: (NIL)**		
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	

Number	**COMPETENCY** **The student should be able to**	**Predominant Domain K/S/A/C**	**Level K/KH/SH/P**	**Core (Y/N)**	**Suggested Teaching Learning method**	**Suggested Assessment method**	**Number required to certify P**
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	**Number of Competencies (5)**			**Number of competencies for certification: (NIL)**		
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	**Number of Competencies (5)**			**Number of competencies for certification: (NIL)**		
AN30.1	Describe the cranial fossae & identify related structures	K,S	SH	Y	LGT, Practical, Demonstration, Dissection	Written/ Viva voce/ skill assessment	

Number	**COMPETENCY** **The student should be able to**	**Predominant Domain K/S/A/C**	**Level K/KH/SH/P**	**Core (Y/N)**	**Suggested Teaching Learning method**	**Suggested Assessment method**	**Number required to certify P**

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		**Number of Competencies (5)**			**Number of competencies for certification: (NIL)**		
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		**Number of Competencies (2)**			**Number of competencies for certification: (NIL)**		
AN32.1	Describe boundaries and subdivisions of anterior triangle	K	KH	Y	LGT	Written/ Viva voce	

Number	COMPETENCY The student should be able to	Predominant Domain K/S/A/C	Level K/KH/SH/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P
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	**Number of Competencies (5)**			**Number of competencies for certification: (NIL)**		
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	**Number of Competencies (3)**			**Number of competencies for certification: (NIL)**		
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	**Number of Competencies (10)**			**Number of competencies for certification: (NIL)**		

AN35.1	Describe the parts, extent, attachments, modifications of deep cervical fascia	K	KH	Y	LGT	Written	

Number	COMPETENCY The student should be able to	Predominant Domain K/S/A/C	Level K/KH/SH/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P
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		**Number of Competencies (7)**			**Number of competencies for certification: (NIL)**		

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	

Number	**COMPETENCY** **The student should be able to**	**Predominant Domain K/S/A/C**	**Level K/KH/SH/P**	**Core (Y/N)**	**Suggested Teaching Learning method**	**Suggested Assessment method**	**Number required to certify P**
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	
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 Waldeyer's lymphatic 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		**Number of Competencies (3)**			**Number of competencies for certification: (NIL)**		
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	**Number of Competencies (3)**			**Number of competencies for certification: (NIL)**		
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	

Number	**COMPETENCY The student should be able to**	**Predominant Domain K/S/A/C**	**Level K/KH/SH/P**	**Core (Y/N)**	**Suggested Teaching Learning method**	**Suggested Assessment method**	**Number required to certify P**
AN38.3	Describe anatomical basis of recurrent laryngeal nerve injury	K	KH	N	LGT	Written	
	Topic 39: Tongue	**Number of Competencies (2)**			**Number of competencies for certification: (NIL)**		
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	**Number of Competencies (5)**			**Number of competencies for certification: (NIL)**		
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		**Number of Competencies (3)**			**Number of competencies for certification: (NIL)**		
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	

Number	**COMPETENCY The student should be able to**	**Predominant Domain K/S/A/C**	**Level K/KH/SH/P**	**Core (Y/N)**	**Suggested Teaching Learning method**	**Suggested Assessment method**	**Number required to certify P**
Topic 42: Back Region		**Number of Competencies (3)**			**Number of competencies for certification: (NIL)**		
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		**Number of Competencies (9)**			**Number of competencies for certification: (NIL)**		
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	

Number	**COMPETENCY** **The student should be able to**	**Predominant Domain K/S/A/C**	**Level K/KH/SH/P**	**Core (Y/N)**	**Suggested Teaching Learning method**	**Suggested Assessment method**	**Number required to certify P**
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		**Number of Competencies (7)**			**Number of competencies for certification: (NIL)**		

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	

Number	**COMPETENCY** **The student should be able to**	**Predominant Domain K/S/A/C**	**Level K/KH/SH/P**	**Core (Y/N)**	**Suggested Teaching Learning method**	**Suggested Assessment method**	**Number required to certify P**
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	**Number of Competencies (3)**			**Number of competencies for certification: (NIL)**		
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		Number of Competencies (5)			Number of competencies for certification: (NIL)		
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	

Number	COMPETENCY The student should be able to	Predominant Domain K/S/A/C	Level K/KH/SH/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P
AN46.5	Explain the anatomical basis of Phimosis & Circumcision	K	KH	N	LGT	Written	
Topic 47: Abdominal cavity		Number of Competencies (14)			Number of competencies for certification: (NIL)(NIL)		
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	

Number	**COMPETENCY** **The student should be able to**	**Predominant Domain K/S/A/C**	**Level K/KH/SH/P**	**Core (Y/N)**	**Suggested Teaching Learning method**	**Suggested Assessment method**	**Number required to certify P**
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		**Number of Competencies (8)**			**Number of competencies for certification: (NIL)**		
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	
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	

Number	**COMPETENCY** **The student should be able to**	**Predominant Domain K/S/A/C**	**Level K/KH/SH/P**	**Core (Y/N)**	**Suggested Teaching Learning method**	**Suggested Assessment method**	**Number required to certify P**
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		**Number of Competencies (5)**			**Number of competencies for certification: (NIL)**		

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	assessmentWritten/ 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		**Number of Competencies (4)**			**Number of competencies for certification: (NIL)**		
AN50.1	Describe the curvatures of the vertebral column	K	KH	Y	LGT	Written/ Viva voce	

Number	**COMPETENCY The student should be able to**	**Predominant Domain K/S/A/C**	**Level K/KH/SH/P**	**Core (Y/N)**	**Suggested Teaching Learning method**	**Suggested Assessment method**	**Number required to certify P**
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		**Number of Competencies (2)**			**Number of competencies for certification: (NIL)**		

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	**Number of Competencies (8)**			**Number of competencies for certification: (NIL)**		
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	

Number	**COMPETENCY** **The student should be able to**	**Predominant Domain K/S/A/C**	**Level K/KH/SH/P**	**Core (Y/N)**	**Suggested Teaching Learning method**	**Suggested Assessment method**	**Number required to certify P**
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	**Number of Competencies (4)**			**Number of competencies for certification: (NIL)**		
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	**Number of Competencies (4)**			**Number of competencies for certification: (NIL)**		
AN54.1	Describe the principles of Plain and contrast radiography, Computed Tomography, Magnetic Resonance Imaging, Positron Emission Tomography scan and Digital subtraction angiography	K	KH	Y	LGT	Viva voce/ skill assessment	

Number	**COMPETENCY** **The student should be able to**	**Predominant Domain K/S/A/C**	**Level K/KH/SH/P**	**Core (Y/N)**	**Suggested Teaching Learning method**	**Suggested Assessment method**	**Number required to certify P**

AN54.2	Describe & identify features of plain X ray abdomen	K,S	SH	Y	LGT, DOAP	Viva voce/ skill assessment	
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		**Number of Competencies (2)**			**Number of competencies for certification: (NIL)**		
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		**Number of Competencies (2)**			**Number of competencies for certification: (NIL)**		
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		**Number of Competencies (5)**			**Number of competencies for certification: (NIL)**		
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	

Number	COMPETENCY The student should be able to	Predominant Domain K/S/A/C	Level K/KH/SH/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P
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	
	Topic 58 : Medulla Oblongata	**Number of Competencies (4)**			**Number of competencies for certification: (NIL)**		
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	**Number of Competencies (4)**			**Number of competencies for certification: (NIL)**		
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	

Number	COMPETENCY The student should be able to	Predominant Domain K/S/A/C	Level K/KH/SH/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P
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		**Number of Competencies (3)**			**Number of competencies for certification: (NIL)**		
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		**Number of Competencies (3)**			**Number of competencies for certification: (NIL)**		
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		**Number of Competencies (6)**			**Number of competencies for certification:**		
(NIL)							
AN62.1	Describe the cranial nerve nuclei with its functional components	K	KH	Y	LGT	Written/ Viva voce	

Number	**COMPETENCY** **The student should be able to**	**Predominant Domain K/S/A/C**	**Level K/KH/SH/P**	**Core (Y/N)**	**Suggested Teaching Learning method**	**Suggested t Assessmen method**	**Number required to certify P**
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		**Number of Competencies (3)**			**Number of competencies for certification:**		
(NIL)							
AN63.1	Describe & demonstrate parts, boundaries & features of 3rd, 4th & 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		**Number of Competencies (3)**			**Number of competencies for certification: (NIL)**		
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	

Number	**COMPETENCY The student should be able to**	**Predominant Domain K/S/A/C**	**Level K/KH/SH/P**	**Core (Y/N)**	**Suggested Teaching Learning method**	**Suggested Assessment method**	**Number required to certify P**
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		**Number of Competencies (2)**			**Number of competencies for certification: (01)**		
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		**Number of Competencies (2)**			**Number of competencies for certification: (NIL)**		
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		**Number of Competencies (3)**			**Number of competencies for certification: (NIL)**		
AN67.1	Describe & identify various types of muscle under the microscope	K,S	SH	Y	LGT, Practical	Written/ skill assessment	
AN67.2	Classify muscleand 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	**Number of Competencies (3)**			**Number of competencies for certification: (NIL)**		
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	**Number of Competencies (3)**			**Number of competencies for certification: (NIL)**		
AN69.1	Identify elastic & muscular blood vessels, capillaries under the microscope	K,S	SH	Y	LGT, Practical	Skill assessment	

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**
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	**Number of Competencies (2)**			**Number of competencies for certification: (NIL)**		
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 andcorrelatethe structure with function	K,S	SH	Y	LGT, Practical	Written/ skill assessment	
	Topic: Bone & Cartilage - Number of Competencies (2)						
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	**Number of Competencies (1)**			**Number of competencies for certification: (NIL)**		

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	**Number of Competencies (3)**			**Number of competencies for certification: (NIL)**		
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	**Number of Competencies (4)**			**Number of competencies for certification: (NIL)**		
AN74.1	Describemendelian 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	

Number	**COMPETENCY** **The student should be able to**	**Predominant Domain K/S/A/C**	**Level K/KH/SH/P**	**Core (Y/N)**	**Suggested Teaching Learning method**	**Suggested Assessment method**	**Number required to certify P**
AN74.3	Describemultifactorial 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	**Number of Competencies (5)**			**Number of competencies for certification: (NIL)**		
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	
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	**Number of Competencies (2)**			**Number of competencies for certification: (NIL)**		
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	
	Topic 77: Gametogenesis and fertilization	**Number of Competencies (6)**			**Number of competencies for certification: (NIL)**		
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	

Number	**COMPETENCY** **The student should be able to**	**Predominant Domain K/S/A/C**	**Level K/KH/SH/P**	**Core (Y/N)**	**Suggested Teaching Learning method**	**Suggested Assessment method**	**Number required to certify P**
AN77.6	Describe teratogenic influences: fertility and sterility, surrogate motherhood, social significance of “sex- ratio”.	K	KH	N	LGT	Written	
	Topic 78 : Second week of development	**Number of Competencies (5)**			**Number of competencies for certification: (NIL)**		
AN78.1	Describe cleavage and formation of blastocyst	K	KH	Y	LGT	Written	
AN78.2	Describe the development of trophoblast	K	KH	Y	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	**Number of Competencies (6)**			**Number of competencies for certification: (NIL)**		
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	

Number	**COMPETENCY** **The student should be able to**	**Predominant Domain K/S/A/C**	**Level K/KH/SH/P**	**Core (Y/N)**	**Suggested Teaching Learning method**	**Suggested Assessment method**	**Number required to certify P**
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	**Number of Competencies (3)**			**Number of competencies for certification: (NIL)**		

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	**Number of Competencies (1)**			**Number of competencies for certification: (NIL)**		
AN 82.1	Demonstrate respect, and follow the correct procedure when handling cadavers and other biologic tissue	A	SH	Y	SGT	NIL	

BLUEPRINT GRID FOR SETTING QUESTION PAPERS

ANATOMY

PAPER I

SL No.	TOPICS	WEIGHTAGE %
1	GENERAL ANATOMY	5
2.	HEAD & NECK	28
3.	UPPER LIMB	21
4.	BRAIN	21
5.	RELATED EMBRYOLOGY	10
6.	RELATED HISTOLOGY	5
7.	GENERAL HISTOLOGY	5
8.	AETCOM 1.5	5
	TOTAL	100

PAPER II

SL No.	TOPICS	WEIGHTAGE %
1.	THORAX	17
2.	ABDOMEN	27
3.	LOWER LIMB	21
4.	GENETICS	5
5.	RELATED EMBRYOLOGY	10
6.	RELATED HISTOLOGY	10
7.	GENERAL EMBRYOLOGY	5
8.	AETCOM 1.4	5
	TOTAL	100

PRACTICAL SCHEME - HUMAN ANATOMY

		Nos.	Marks	Total
1	Gross Spotters	12	2	24
	Upper limb (2) Lower limb (2) Abdomen (2) Pelvis perineum (1) Thorax (1) Head & Neck (2) Brain & Spinal Cord (2)			
11	Histology Spotters	12	2	24
	General (4) Systemic (8) Paper l (4) & Paper Il (4)			
111	OSPE	4	2	8
	4 stations – Surface Marking 2 from Paper I and 2 from Paper Il			
	Discussion	4	6	24
	Gross - Paper I & Paper Il Histology – General & Systemic			

Total 80 Marks

Viva — 20 Marks

Radiology	5 Marks
Osteology	5 Marks
Clinical Anatomy & Genetics	5 Marks
Embryology	5 Marks
Total	20 Marks

PHYSIOLOGY
(CODE: PY)

PHYSIOLOGY (Topics = 12, Competencies = 136)

Topic 1: General Physiology		**Number of competencies: (7)**				**Number of competencies that require certification : (NIL)**	
PY1.1	Describe the structure and functions of a cell, intercellular communication and their applications in Clinical care and research	K	KH	Y	LGT	Written/Viva voce	
PY1.2	Discuss the principles of homeostasis and feedback mechanism	K	KH	Y	LGT	Written/Viva voce	
PY1.3	Describe apoptosis (programmed cell death) , explain its mechanism of action and physiological significance.	K	KH	Y	LGT SGT	Written/Viva voce	
PY1.4	Describe and discuss various transport mechanisms across cell membranes	K	KH	Y	LGT Student Seminar	Written/Viva voce/Assignments	
PY1.5	Describe the fluid compartments of the body, its ionic composition & measurement methods	K	KH	Y	LGT	Written/Viva voce	
PY1.6	Describe the concept of pH & Buffer systems in the body	K	KH	Y	LGT SGT	Written/Viva voce	
PY1.7	Describe the molecular basis of resting membrane potential (RMP) and generation of action potential in a nerve fibre	K	KH	Y	LGT SGT/Tutorial	Written/Viva voce	
Topic 2: Haematology		**Number of competencies: (13)**				**Number of competencies that require certification : (01)**	
PY2.1	Describe the composition and functions of blood and its components	K	KH	Y	LGT SGT	Written/Viva voce	
PY2.2	Discuss the origin, forms, variations and functions of plasma proteins and its clinical implications	K	KH	Y	LGT SGT	Written/Viva voce	
PY2.3	Describe the physiological structure, synthesis , functions and breakdown of Hemoglobin. Discuss its variants and clinical significance.	K	KH	Y	LGT SGT	Written/Viva voce	
PY2.4	Describe Erythropoiesis & discuss its regulation in physiological and pathological situations	K	KH	Y	LGT SGT	Written/Viva voce	
PY2.5	Describe anaemias, polycythemia & jaundice and discuss its physiological principles of management	K	KH	Y	LGT SGT, Student	Written/Viva voce	

					Seminar, ECE		
PY2.6	Describe the formation of WBC (Leucopoiesis), structure and function of various WBC types and their regulatory mechanisms	K	KH	Y	LGT SGT	Written/Viva voce	

Number	COMPETENCY The student should be able to:	Predominant Domain K/S/A/C	Level K/KH/ SH/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P
PY2.7	Discuss 'Immunity' in terms of its types, development , regulation and physiological significance	K	KH	Y	LGT SGT/Tutorials	Written/Viva voce	
PY2.8	Describe the formation of platelets (thrombopoiesis), structure, functions and variations.	K	KH	Y	LGT SGT	Written/Viva voce	
PY2.9	Describe hemostasis, coagulation pathways, mechanism of action of anticoagulants and briefly discuss pathophysiological aspects of bleeding & clotting disorders (e.g. hemophilia, purpura)	K	KH	Y	LGT SGT, ECE- Visit to blood bank Flipped Classroom	Written/Viva voce	
PY2.10	Discuss types of blood groups, clinical importance of blood grouping, blood banking and transfusion	K	KH	Y	LGT SGT,ECE- Visit to blood bank	Written/Viva voce	
PY2.11	Estimate Hb, RBC, TLC, DLC, Blood groups, BT/CT,RBC indices	S	SH	Y	DOAPs	Practical/OSPE/Viva voce	01 EACH
PY2.12	Describe the test to measure Erythrocyte Sedimentation Rate (ESR), Osmotic fragility, Hematocrit, and interpret its findings	K	KH	Y	Demonstration	Written /Viva voce/OSPE (Question station)	
PY2.13	Describe steps for reticulocyte and platelet count	K	KH	Y	Demonstration	Written /Viva voce	

Topic 3: Nerve and Muscle Physiology		Number of competencies: (12)				Number of competencies that require certification : (01)	
PY3.1	Describe the structure and functions of a neuron and neuroglia; Discuss nerve growth factors	K	KH	Y	LGT	Written/Viva voce	
PY3.2	Describe the types, functions , properties of nerve fibers including strength duration curve, chronaxie and rheobase	K	KH	Y	LGT	Written/Viva voce	
PY3.3	Classify nerve injury and discuss the mechanism of degeneration and regeneration in peripheral nerves	K	KH	Y	LGT	Written/Viva voce	
PY3.4	Describe the microscopic structure of neuro-muscular junction (NMJ) and mechanism of neuromuscular transmission	K	KH	Y	LGT SGT	Written/Viva voce	
PY3.5	Discuss the applied aspects of neuromuscular junction : myasthenia gravis, Lambert Eaton syndrome and neuromuscular blocking agents.	K	KH	Y	LGT SGT, ECE (classroom / hospital setting)	Written/Viva voce	
PY3.6	Describe the different types of muscle fibres, their structure and physiological basis of action potential	K	KH	Y	LGT	Written/Viva voce	

Number	COMPETENCY The student should be able to:	Predominant Domain K/S/A/C	Level K/KH/ SH/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P
PY3.7	Describe properties, action potential and molecular basis of muscle contraction in skeletal muscle	K	KH	Y	LGT SGT Flipped Classroom	Written/Viva voce	
PY3.8	Describe properties, action potential and molecular basis of muscle contraction in smooth muscle	K	KH	Y	LGT SGT	Written/Viva voce	
PY3.9	Describe the mode of muscle contraction (isometric and isotonic), energy source, muscle metabolism and gradation of muscular activity	K	KH	Y	LGT	Written/Viva voce	
PY3.10	Enumerate and briefly discuss myopathies	K	KH	Y	LGT SGT	Written/Viva voce	

PY3.11	Perform Ergography and calculate the work done by a skeletal muscle	S	SH	Y	DOAPs	Practical/OSPE/Viva voce	01 EACH
PY3.12	Observe with Computer assisted learning (i) Amphibian nerve - muscle experiments (ii) Amphibian cardiac experiments	S	SH	Y	DOAPs	Practical/OSPE/Viva voce	
Topic 4: Gastro-intestinal Physiology Number of competencies: (12) Number of competencies that require certification : (01)							
PY4.1	Describe the functional anatomy of digestive system	K	KH	Y	LGT SGT	Written/Viva voce	
PY4.2	Enumerate various Gastrointestinal hormones (GI) hormones, discuss their functions and regulation	K	KH	Y	LGT SGT	Written/Viva voce	
PY4.3	Describe the composition, mechanism of secretion, functions, and regulation of saliva	K	KH	Y	LGT SGT	Written/Viva voce	
PY4.4	Describe the composition, mechanism of secretion, functions, and regulation of gastric juice. Discuss various gastric function tests	K	KH	Y	LGT	Written/Viva voce	
PY4.5	Describe the composition, mechanism of secretion, functions, and regulation of pancreatic juice including various pancreatic exocrine function tests	K	KH	Y	LGT	Written/Viva voce	
PY4.6	Describe the composition, mechanism of secretion, functions, and regulation of intestinal juices	K	KH	Y	LGT	Written/Viva voce	
PY4.7	Describe the physiology of digestion and absorption of nutrients	K	KH	Y	LGT SGT	Written/Viva voce	
PY4.8	Describe GIT movements, its regulation and physiological significance including defecation reflex and the role of dietary fibres	K	KH	Y	LGT SGT Flipped Classroom	Written/Viva voce	

Number	**COMPETENCY The student should be able to:**	**Predominant Domain K/S/A/C**	**Level K/KH/ SH/P**	**Core (Y/N)**	**Suggested Teaching Learning method**	**Suggested Assessment method**	**Number required to certify P**
PY4.9	Describe the structure , functions and secretion of liver and gallbladder with elaboration of various liver function tests	K	KH	Y	LGT SGT	Written/Viva voce	

PY4.10	Describe the Gut-Brain Axis and its physiological significance	K	KH	Y	LGT SGT,	Written/Viva voce	
PY4.11	Discuss (in brief) the applied physiology of GIT viz. Peptic ulcer, gastroesophageal reflux disease, vomiting, diarrhoea, constipation, Adynamic ileus, Hirschsprung's disease	K	KH	Y	LGT SGT, ECE, SDL	Written/Viva voce	
PY4.12	Obtain relevant history and conduct correct General and Clinical examination of the abdomen in a normal volunteer or simulated environment	S,A,C	SH	Y	DOAP (Simulation or real life setting)	Skill assessment/ Viva voce/OSCE	1
Topic 5: Cardiovascular Physiology		**Number of competencies: (16)**				**Number of competencies that require certification : (03)**	
PY5.1	Describe the functional anatomy of heart including chambers and coronary circulation	K	KH	Y	LGT	Written/Viva voce	
PY5.2	Describe the properties of cardiac muscle including its morphology, electrical, mechanical and metabolic functions	K	KH	Y	LGT SGT	Written/Viva voce	
PY5.3	Describe generation and conduction of cardiac impulse along with the conduction pathway (including pacemaker potential).	K	KH	Y	LGT SGT	Written/Viva voce	
PY5.4	Discuss the physiological events occurring during the cardiac cycle, concurrent pressure volume changes, generation of heart sounds and murmur	K	KH	Y	LGT SGT Flipped Classroom	Written/Viva voce	
PY5.5	Describe the physiology of electrocardiogram (E.C.G), the cardiac axis and its applications	K	KH	Y	LGT SGT, ECE	Written/Viva voce/OSCE (Question station)	
PY5.6	Discuss physiological variations in ECG waveforms, abnormal waveforms and intervals , arrhythmias, heart blocks and myocardial Infarction	K	KH	Y	LGT SGT/Student seminars/ECE	Written/Viva voce	
PY5.7	Discuss haemodynamics of circulatory system	K	KH	Y	LGT SGT/Tutorials	Written/Viva voce	
PY5.8	Describe and discuss local and systemic cardiovascular regulatory mechanisms	K	KH	Y	LGT SGT	Written/Viva voce	
PY5.9	Describe heart rate, factors affecting heart rate, and its regulation	K	KH	Y	LGT SGT	Written/Viva voce	

Number	COMPETENCY The student should be able to:	Predominant Domain K/S/A/C	Level K/KH/ SH/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P
PY5.10	Describe cardiac output, factors affecting cardiac output and its regulation.	K	KH	Y	LGT SGT	Written/Viva voce	
PY5.11	Describe blood pressure, factors affecting blood pressure and its regulation	K	KH	Y	LGT SGT/Student seminars	Written/Viva voce	
PY5.12	Describe & discuss regional circulation including microcirculation, lymphatic circulation, cerebral, capillary, skin, foetal, pulmonary and splanchnic circulation	K	KH	Y	LGT SGT	Written/Viva voce	
PY5.13	Describe the patho-physiology of shock, syncope heart failure with physiological basis of its management	K	KH	Y	LGT SGT / Student seminars	Written/Viva voce	
PY5.14	Record blood pressure & pulse at rest and in different grades of exercise and postures in a volunteer or simulated environment	S	SH	Y	DOAPs (Simulation or real life setting)	Practical/OSPE/ Viva voce	3
PY5.15	Record and interpret normal ECG in a volunteer or simulated environment	S	SH	Y	DOAPs (Simulation or real life setting)	Practical/OSPE/ Viva voce	1
PY5.16	Obtain relevant history and conduct General and Clinical examination of the cardiovascular system in a normal volunteer or simulated environment	S,A,C	SH	Y	DOAPs	Skill assessment/ Viva voce/OSCE	1
Topic 6: Respiratory Physiology		**Number of competencies: (13)**			**Number of competencies that require certification : (02)**		
PY6.1	Describe the functional anatomy of respiratory tract and non-respiratory functions of lungs	K	KH	Y	LGT SGT	Written/Viva voce	
PY6.2	Describe the mechanics of normal respiration, pressure changes during ventilation, lung volume and capacities (Static and Dynamic)	K	KH	Y	LGT SGT	Written/Viva voce	
PY6.3	Describe the alveolar surface tension, compliance, airway resistance, ventilation, V/P ratio, diffusion capacity of lungs	K	KH	Y	LGT SGT	Written/Viva voce	

PY6.4	Discuss the transport of respiratory gases viz Oxygen and Carbon dioxide across lungs and whole body	K	KH	Y	LGT	Written/Viva voce	
PY6.5	Describe the chemoreceptors (peripheral and central) and neural centres of respiration including chemical and neural regulation of respiration	K	KH	Y	LGT	Written/Viva voce	

Number	COMPETENCY The student should be able to:	Predominant Domain K/S/A/C	Level K/KH/ SH/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P
PY6.6	Describe and discuss the pathophysiology of dyspnoea, hypoxia, cyanosis, asphyxia, drowning, periodic breathing and oxygen therapy	K	KH	Y	LGT SGT	Written/Viva voce	
PY6.7	Discuss various lung function tests and their clinical significance in obstructive and restrictive lung diseases	K	KH	Y	LGT SGT, Tutorials Flipped Classroom	Written/Viva voce	
PY6.8	Discuss the physiology of high altitude and acclimatization	K	KH	Y	LGT	Written/Viva voce	
PY6.9	Discuss the physiology of deep sea diving and decompression sickness	K	KH	Y	LGT	Written/Viva voce	
PY6.10	Perform Spirometry and interpret the findings (Digital / Manual)	S	P	Y	DOAPs	Skill assessment/ Viva voce/OSCE	1
PY6.11	Describe principles and methods of artificial respiration	S	SH	Y	DOAPs	Practical/OSPE/ Viva voce	
PY6.12	Obtain relevant history and conduct correct General and Clinical examination of the respiratory system in a normal volunteer or simulated environment	S,A,C	SH	Y	DOAPs	Practical/OSPE/ Viva voce	1
PY6.13	Demonstrate the correct technique to perform measurement of peak expiratory flow rate in a normal volunteer or simulated environment	S	SH	Y	DOAPs	Practical/OSPE/ Viva voce	
Topic 7: Renal Physiology		**Number of competencies: (9)**				**Number of competencies that require certification : (NIL)**	

PY7.1	Describe the functional anatomy of kidney and non-excretory functions of kidney	K	KH	Y	LGT SGT	Written/Viva voce	
PY7.2	Describe the structure and functions of juxta glomerular apparatus and role of renin-angiotensin system	K	KH	Y	LGT	Written/Viva voce	
PY7.3	Describe the mechanism of urine formation involving processes of filtration (Glomerular filtration), tubular reabsorption & secretion.	K	KH	Y	LGT SGT, Student Seminar	Written/Viva voce	
PY7.4	Describe the mechanism of urine concentration and dilution (Counter current Multiplier & Exchanger)	K	KH	Y	LGT SGT Flipped Classroom	Written/Viva voce	
PY7.5	Describe the renal regulation of fluid and electrolytes & acid-base balance	K	KH	Y	LGT SGT	Written/Viva voce	
PY7.6	Describe the innervations of urinary bladder, physiology of micturition and its abnormalities	K	KH	Y	LGT SGT	Written/Viva voce	

Number	**COMPETENCY** **The student should be able to:**	**Predominant Domain K/S/A/C**	**Level K/KH/ SH/P**	**Core (Y/N)**	**Suggested Teaching Learning method**	**Suggested Assessment method**	**Number required to certify P**
PY7.7	Describe cystometry and discuss the normal cystometrogram	K	KH	Y	LGT SGT	Written/Viva voce	
PY7.8	Discuss various Renal Function Tests with its physiological significance and clinical implication of Renal clearance	K	KH	Y	LGT SGT, ECE (classroom / hospital setting)	Written/Viva voce	
PY7.9	Discuss the role of artificial kidneys, dialysis and indications of renal transplant	K	KH	Y	LGT	Viva voce	
Topic 8: Endocrine Physiology		**Number of competencies: (7)**				**Number of competencies that require certification : (NIL)**	
PY8.1	Describe the functional anatomy of endocrine glands, mechanism of hormonal action (steroid and peptide) and hypothalamus pituitary axis {HPA}	K	KH	Y	LGT Flipped Classroom	Written/Viva voce	

PY8.2	Describe the synthesis, secretion, transport, physiological actions, regulation and effect of altered (hypo and hyper) secretion of pituitary gland	K	KH	Y	LGT SGT	Written/Viva voce	
PY8.3	Describe the synthesis, secretion, transport, physiological actions, regulation and effect of altered (hypo and hyper) secretion of thyroid gland including thyroid function tests	K	KH	Y	LGT SGT, ECE	Written/Viva voce	
PY8.4	Describe the synthesis, secretion, transport, physiological actions, regulation and effect of altered (hypo and hyper) secretion of adrenal gland and its function tests	K	KH	Y	LGT SGT	Written/Viva voce	
PY8.5	Describe the synthesis, secretion, transport, physiological actions, regulation and effect of altered (hypo and hyper) secretion of parathyroid gland with emphasis of physiology of bone and calcium metabolism	K	KH	Y	LGT SGT/Tutorials	Written/Viva voce	
PY8.6	Describe the synthesis, secretion, transport, physiological actions, regulation and effect of altered (hypo and hyper) secretion of pancreatic gland including pancreatic function tests	K	KH	Y	LGT SGT	Written/Viva voce	
PY8.7	Describe the physiology of Thymus & Pineal Gland	K	KH	Y	LGT	Written/Viva voce	
Topic 9: Reproductive Physiology **Number of competencies: (10)** **Number of competencies that require certification : (NIL)**							

Number	COMPETENCY The student should be able to:	Predominant Domain K/S/A/C	Level K/KH/ SH/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P
PY9.1	Explain sex determination, sex differentiation and their abnormalities and discuss the effects of removal of gonads on physiological functions	K	KH	Y	LGT SGT	Written/Viva voce	
PY9.2	Describe and discuss puberty: onset, progression, stages; early and delayed puberty.	K	KH	Y	LGT SGT	Written/Viva voce	

PY9.3	Describe the functional anatomy of male reproductive system, functions of testis, spermatogenesis and discuss the functions and regulations of testosterone hormone	K	KH	Y	LGT SGT	OSPE/Viva voce	
PY9.4	Describe the functional anatomy of female reproductive system: functions of ovary and its hormones (estrogen and progesterone) ; hormonal regulation by hypothalamic pituitary gonadal (HPG axis)	K	KH	Y	LGT SGT , Student Seminar	Written/Viva voce	
PY9.5	Discuss the menstrual cycle, uterine and ovarian changes, hormonal regulation and its implications in reproductive physiology	K	KH	Y	LGT SGT, ECE	Written/Viva voce	
PY9.6	Enumerate male and female contraceptive methods, rationale of its prescription, side effects and its advantages & disadvantages	K	KH	Y	LGT SGT, ECE,SDL	Written/Viva voce	
PY9.7	Discuss the physiology of pregnancy, parturition & lactation.	K	KH	Y	LGT SGT, Flipped Classroom	Written/Viva voce	
PY9.8	Discuss the physiological basis of various pregnancy tests	K	KH	Y	LGT SGT	Written/Viva voce	
PY9.9	Discuss the hormonal changes and their effects during perimenopause and menopause	K	KH	Y	LGT SGT	Written/Viva voce	
PY9.10	Discuss the common causes of infertility in a couple and role of IVF in managing a case of infertility	K	KH	Y	LGT SGT, visit to IVF lab	Written/Viva voce	
Topic 10: Central Nervous System Physiology		**Number of competencies: (20)**				**Number of competencies that require certification : (02)**	
PY10.1	Describe and discuss the functional organization of central nervous system (brain and spinal cord)	K	KH	Y	LGT SGT	Written/Viva voce	
PY10.2	Describe the functional anatomy of peripheral nervous system (including autonomic nervous system)	K	KH	Y	LGT SGT	Written/Viva voce	
PY10.3	Classify the neurotransmitters and discuss the chemical transmission in the nervous system.	K	KH	Y	LGT SGT	Written/Viva voce	

Number	COMPETENCY The student should be able to:	Predominant Domain K/S/A/C	Level K/KH/ SH/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P
PY10.4	Discuss the classification, functions and properties of synapse	K	KH	Y	LGT SGT ,Student Seminar	Written/Viva voce	
PY10.5	Discuss the classification, functions and properties of reflex	K	KH	Y	LGT SGT, Student Seminar	Written/Viva voce	
PY10.6	Discuss the classification, functions and properties of receptors	K	KH	Y	LGT SGT , Student Seminar	Written/Viva voce	
PY10.7	Discuss somatic sensations, ascending tracts, (sensory tracts) and applied aspects of sensory system	K	KH	Y	LGT SGT	Written/Viva voce	
PY10.8	Discuss Physiology of pain including pain pathways and its modulation with special emphasis on gate control theory of pain	K	KH	Y	LGT SGT, visit to pain clinic	Written/Viva voce	
PY10.9	Describe the course of descending tracts (pyramidal and extra pyramidal), its clinical implications including difference in Upper motor neuron (UMN)and lower motor neuron (LMN) lesions	K	KH	Y	LGT SGT	Written/Viva voce	
PY10.10	Discuss types and clinical features of spinal cord lesions (complete, incomplete transection and hemisection - Brown Sequard syndrome)	K	KH	Y	LGT SGT, Tutorials, ECE	Written/Viva voce	
PY10.11	Describe functional anatomy of cerebellum, its connections, functions and clinical abnormalities .	K	KH	Y	LGT SGT	Written/Viva voce	
PY10.12	Discuss functional anatomy of basal ganglia , its connections, functions and Clinical abnormalities .	K	KH	Y	LGT SGT	Written/Viva voce	
PY10.13	Discuss the mechanism of maintenance of tone, posture and control of body movements	K	KH	Y	LGT SGT Flipped Classroom	Written/Viva voce	
PY10.14	Discuss functional anatomy of thalamus , its connections, functions and clinical abnormalities .	K	KH	Y	LGT SGT	Written/Viva voce	
PY10.15	Discuss functional anatomy of hypothalamus and limbic system , its connections, functions and clinical abnormalities .	K	KH	Y	LGT SGT	Written/Viva voce	

PY10.16	Discuss functional anatomy of cerebral cortex, its connections, functions and Clinical abnormalities	K	KH	Y	LGT SGT	Written/Viva voce	
PY10.17	Discuss the structure and functions of reticular activating system, sleep physiology and EEG waveforms during sleep wake cycle	K	KH	Y	LGT SGT, visit to sleep lab	Written/Viva voce	

Number	**COMPETENCY** **The student should be able to:**	**Predominant Domain K/S/A/C**	**Level K/KH/ SH/P**	**Core (Y/N)**	**Suggested Teaching Learning method**	**Suggested Assessment method**	**Number required to certify P**
PY10.18	Discuss the physiological basis of memory, learning and speech and clinical alterations in speech	K	KH	Y	LGT SGT	Written/Viva voce	
PY10.19	Obtain relevant history and conduct correct General and Clinical examination of the nervous system: Higher functions, sensory system, motor system, reflexes in a normal volunteer or simulated environment	S	SH	Y	DOAPs	Skill assessment/ Viva voce/OSCE	4 (each)
PY10.20	Obtain relevant history and conduct correct General and Clinical examination of the cranial nerves in a normal volunteer or simulated environment	S	P	Y	DOAPs	OSCE/Viva voce	1 (each)
Topic 11: Special Senses		**Number of competencies: (7)**				**Number of competencies that require certification : (NIL)**	
PY11.1	Describe and discuss physiology of smell and its applied aspects	K	KH	Y	LGT SGT	Written/Viva voce	
PY11.2	Describe and discuss physiology of taste sensation and applied aspects	K	KH	Y	LGT SGT	Written/Viva voce	
PY11.3	Describe and discuss functional anatomy of ear and auditory pathways, vestibular apparatus and equilibrium	K	KH	Y	LGT SGT	Written/Viva voce	
PY11.4	Discuss physiology of hearing, pathophysiology of deafness and hearing tests	K	KH	Y	LGT SGT	Written/Viva voce	
PY11.5	Discuss functional anatomy of eye, visual pathway, light and pupillary reflex and clinical implication of lesions in visual pathway	K	KH	Y	LGT SGT	Written/Viva voce	
PY11.6	Discuss physiology of image formation, refractive errors and physiological principles of its management	K S	P	Y	LGT SGT ECE	Written/Viva voce	

PY11.7	Discuss physiology of vision including colour vision and colour blindness	K	KH	Y	LGT SGT Flipped Classroom	Written/Viva voce	
Topic 12: Integrated Physiology			**Number of competencies: (10)**			**Number of competencies that require certification : (NIL)**	
PY12.1	Describe physiological mechanism of temperature regulation	K	KH	Y	LGT SGT	Written/Viva voce	
PY12.2	Discuss adaptation to altered temperature (heat and cold) and mechanism of fever, cold injuries and heat stroke	K	KH	Y	LGT SGT	Written/Viva voce	
PY12.3	Discuss cardio-respiratory and metabolic adjustments during exercise (isometric and isotonic), effects of physical training under different environmental conditions (heat and cold)	K	KH	Y	LGT SGT	Written/Viva voce	
Number	**COMPETENCY** **The student should be able to:**	**Predominant Domain K/S/A/C**	**Level K/KH/ SH/P**	**Core (Y/N)**	**Suggested Teaching Learning method**	**Suggested Assessment method**	**Number required to certify P**
PY12.4	Discuss physiological consequences of sedentary lifestyle; metabolic and endocrinal consequences of obesity & metabolic syndrome.	K	KH	Y	LGT SGT	Written/Viva voce	
PY12.5	Describe physiology of Infancy, Interpret growth charts and anthropometric assessment of infants	K	KH	Y	LGT SGT, ECE	Written/Viva voce	
PY12.6	Describe and discuss physiology of aging, role of free radicals and antioxidants	K	KH	Y	LGT SGT	Written/Viva voce	
PY12.7	Discuss the concept, criteria for diagnosis of Brain death and its implications	K	KH	Y	Small group teaching	Practical/OSPE/ Viva voce	
PY12.8	Discuss the physiology of yoga and meditation	K	KH	Y	Small group teaching	Practical/OSPE/ Viva voce	
PY12.9	Obtain history and perform general examination in the volunteer / simulated environment	S	SH	Y	DOAPs	Skill assessment/ Viva voce/OSCE	
PY12.10	Demonstrate Basic Life Support in a simulated environment	S	SH	Y	DOAPs, Simulation lab (Simulation or real life setting)	Skill assessment/ Viva voce/OSCE	

BLUEPRINT GRID FOR SETTING QUESTION PAPERS

PHYSIOLOGY

PAPER I

SL No.	TOPICS	WEIGHTAGE %
1	GENERAL PHYSIOLOGY	5
2.	HEMATOLOGY	18
3.	CARDIOVASCULAR SYSTEM	22
4.	RESPIRATORY SYSTEM	20
5.	GIT	15
6.	RENAL SYSTEM	10
7.	SKIN & TEMPERATURE	5
8	AETCOM 1.2	5
	TOTAL	100

PAPER II

SL No.	TOPICS	WEIGHTAGE %
1.	NERVOUS SYSTEM	25
2.	NERVE- MUSCLE	8
3.	SPECIAL SENSES	18
4.	ENDOCRINOLOGY	25
5.	REPRODUCTIVE SYSTEM	14
6.	INTEGRATED PHYSIOLOGY	5
7.	AETCOM 1.3	5
	TOTAL	100

PRACTICAL SCHEME – PHYSIOLOGY

80+20 = 100 Marks

LAB 1	
Major Haematology Experiment (RBC, WBC, DC)	20 Marks
Minor Haematology Experiment (Hb, BT, CT, Blood Grouping)	10 Marks
Amphibian charts (OSPE)	5 Marks
Lab Investigations (OSPE)	5 Marks
LAB 2	
Clinical Examination	20 Marks
Human Experiments	10 Marks
Case Scenario (OSPE)	5 Marks
Skill Tests (OSCE)	5 Marks
GRAND TOTAL	**80 Marks**

Viva - 20 Marks

Case Scenario and Instruments – Paper I	5 Marks
Lab Investigations and Graphs – Paper I	5 Marks
Case Scenario and Instruments – Paper II	5 Marks
Lab Investigations and Graphs – Paper II	5 Marks
TOTAL	**20 Marks**

BIOCHEMISTRY
(CODE: BC)

BIOCHEMISTRY (Topics = 14, Competencies = 84)							
Topic 1: Basic Biochemistry			**Number of competencies:(01)**			**Number of competencies that require certification:(NIL)**	
BC1.1	Describe the molecular and functional organization of a cell and its subcellular components and composition and functions of Biological membranes.	K	KH	Y	LGT, SGT / **SDL**	Written assessment/ Viva voce	
Topic 2: Enzyme			**Number of competencies:(05)**			**Number of competencies that require certification:(NIL)**	
BC2.1	Explain fundamental concepts of enzyme, isoenzyme and coenzyme. Enumerate the main classes of IUBMB nomenclature.	K	KH	Y	LGT, **SGT**	Written assessment / Viva voce	
BC2.2	Describe and explain the basic principles of enzyme activity	K	KH	Y	LGT, **SGT**	Written assessment / Viva voce	
BC2.3	Describe and discuss enzyme Inhibition and role of enzymes or drugs as Inhibitors, and enzymes as therapeutic agents.	K	KH	Y	LGT, Case discussion SGT	Written assessment / Viva voce	
BC2.4	Describe and discuss the clinical utility of various serum enzymes in laboratory and their use as markers of various pathological conditions.	K	KH	Y	LGT, SGT, Flipped class room	Written assessment / Viva voce	
BC2.5	Interpret laboratory results of enzymes in various disorders.	K	KH	Y	SGT, DOAPs, Case Studies	Written assessment/ Viva voce/ Case studies, OSPE	
Topic 3: Chemistry and Metabolism of Carbohydrates			**Number of competencies:(06)**			**Number of competencies that require certification:(NIL)**	

Number	COMPETENCY The student should be able to	Predominant Domain K/S/A/C	Level K/KH/SH/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P
BC3.1	Discuss and differentiate monosaccharides, di-saccharides and polysaccharides with examples, their importance as energy fuel, structural element, and storage molecule in human body.	K	KH	Y	LGT, SGT	Written/Viva voce	
BC3.2	Describe the digestion, absorption and transport of carbohydrates from food along with its disorders.	K	KH	Y	LGT, SGT, SDL	Written/Viva-voce	
BC3.3	Define and briefly describe the pathways of carbohydrate metabolism and their regulation (glycolysis, gluconeogenesis, TCA, and significance of glycogen metabolism and HMP shunt), with associated disorders.	K	KH	Y	LGT, SGT, Flipped class room	Written/Viva voce	
BC3.4	Describe and discuss the regulation, functions and integration of minor Carbohydrate Metabolism pathway briefly along with associated diseases /disorders.	K	KH	Y	LGT, SGT	Written/Viva-voce	
BC3.5	Discuss the mechanism and significance of blood glucose regulation (Glucose homeostasis) in health and disease. Describe the types, Biochemical changes, complications and laboratory investigations related to diabetes & other carbohydrate metal disorders.	K	KH	Y	LGT, SGT, Flipped class room	Written/Viva voce	
BC3.6	Interpret the results of analytes associated with metabolism of carbohydrates and other laboratory investigations related to disorders of carbohydrate metabolism.	K	KH	Y	LGT, SGT Case Studies / SDL, Flipped class room	Written/ Viva voce/ Case Studies /OSPE	
Topic 4 : Chemistry and Metabolism of Lipids		**Number of competencies: (08)**				**Number of competencies that require certification:(NIL)**	
BC4.1	Describe and discuss main classes of lipids and their functions.	K	KH	Y	LGT, SGT /SDL	Written/Viva voce	
BC4.2	Describe the digestion and absorption of dietary lipids and its (associated disorders.	K	KH	Y	LGT, SGT /SDL	Written /Viva voce	

BC4.3	Describe and discuss the fatty acid oxidation, metabolism of ketone bodies along with their clinical significance.	K	KH	Y	LGT, SGT	Written /Viva voce	

Number	COMPETENCY The student should be able to	Predominant Domain K/S/A/C	Level K/KH/SH/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P
BC4.4	Describe metabolism of Triglycerides and cholesterol metabolism along with its regulation and clinical significance.	K	KH	Y	LGT, SGT	Written /Viva voce	
BC4.5	Describe the metabolism of lipoproteins with brief overview of lipoprotein structure, their interrelations & relations with atherosclerosis.	K	KH	Y	LGT, SGT	Written /Viva voce	
BC4.6	Discuss Biological role and therapeutic applications of Eicosanoids and their Inhibitors.	K	KH	Y	LGT, SGT, Flipped class room	Written /Viva voce	
BC4.7	Describe Fatty liver, cholelithiasis and obesity.	K	KH	Y	LGT, SGT, Case Studies/Scenarios/SDL	Written /Viva voce	
BC4.8	Interpret laboratory results of analytes associated with metabolism of lipids	K	KH	Y	LGT, SGT, case studies, Flipped class room	Written/Viva voce/ case studies/OSPE	
Topic 5: Chemistry & Metabolism of Proteins and Immunology			**Number of competencies:(09)**			**Number of competencies that require certification:(NIL)**	
BC5.1	Discuss briefly structure of amino acids and classify amino acids on the basis of Nutritional and Metabolic significance.	K	KH	Y	LGT, SGT/SDL	Written / Viva voce	
BC5.2	Discuss classification of proteins, structural organization, functions and clinical aspects.	K	KH	Y	LGT, SGT	Written / Viva voce	
BC 5.3	Describe the digestion and absorption of dietary proteins	K	KH	Y	LGT, SGT / SDL	Written / Viva voce	

BC 5.4	Describe plasma proteins and their functions and brief overview of normal and abnormal electrophoretic pattern of serum proteins, acute phase proteins.	K	KH	Y	LGT, SGT	Written / Viva voce	
BC 5.5	Describe the structure, functions and disorders of Immunoglobulins with brief description of cellular and humoral Immunity.	K	KH	Y	LGT, SGT	Written / Viva voce	

Number	COMPETENCY The student should be able to	Predominant Domain K/S/A/C	Level K/KH/SH/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P
BC 5.6	Describe the formation, transport, detoxification of Ammonia, Ammonia toxicity and its clinical significance.	K	KH	Y	LGT, SGT	Written / Viva voce	
BC 5.7	Describe the specialized products formed from the amino acids Glycine, Phenylalanine, Tyrosine, Tryptophan, and Methionine, branched chain amino acids and Arginine and the inborn errors associated with them. Discuss new-born screening.	K/S	KH/SH	Y	LGT, SGT	Written / Viva voce	
BC5.8	Describe the structure and functions of haem in the body and describe the processes involved in its metabolism with emphasis on jaundice and describe porphyrin metabolism.	K	KH	Y	LGT, SGT	Written / Viva voce	
BC5.9	Describe the major types of Hemoglobin and its types, derivatives & variants found in the body and their physiological / pathological relevance	K	KH	Y	LGT, SGT	Written / Viva voce	
Topic 6: Extracellular Matrix			**Number of competencies: (03)**				**Number of competencies that require certification: (NIL)**
BC6.1	Enumerate the functions and components of the extracellular matrix (ECM).	K	KH	Y	LGT, SGT	Written/Viva voce	

BC6.2	Discuss the involvement of ECM components in health and disease.	K	KH	Y	LGT, SGT	Written/Viva voce	
BC6.3	Describe protein targeting & sorting along with its associated disorders.	K	KH	N	LGT, SGT	Written/Viva voce	
Topic 7: **Integration of Metabolism and Biological Oxidation** **Number of competencies: (02)** **Number of competencies that require certification: (NIL)**							
BC7.1	Describe the integration of various metabolic processes in the body (Carbohydrate, Lipid, and Protein).	K	KH	Y	LGT, SGT	Written/viva voce	
BC7.2	Describe the Biochemical processes involved in generation of energy in cells.	K	KH	Y	LGT, SGT	Written/Viva voce	
Topic 8: Vitamins and Nutrition **Number of competencies: (06)** **Number of competencies that require certification: (NIL)**							

Number	COMPETENCY The student should be able to	Predominant Domain K/S/A/C	Level K/KH/SH/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P
BC8.1	Describe the Biochemical role of vitamins in the body and explain the manifestations of their deficiency	K	KH	Y	LGT, SGT	Written/Viva voce	
BC8.2	Discuss the importance of various dietary components and explain importance of dietary fibre.	K	KH	Y	LGT, SGT, SDL	Written/Viva voce	
BC8.3	Describe the types and causes of protein energy malnutrition and its effects.	K	KH	Y	LGT, SGT	Written/Viva voce	
BC8.4	Provide dietary advice for optimal health in childhood and adult in disease conditions like diabetes mellitus, coronary artery disease and in pregnancy.	K/S/C	KH	Y	LGT, SGT / role play	Written/Viva voce	
BC8.5	Describe the causes (including dietary habits), effects and health risks associated with being overweight/ obese / metabolic syndrome	K	KH	Y	LGT, SGT	Written/Viva voce	

BC8.6	Summarize the nutritional importance of commonly used items of food including fruits and vegetables (macro-molecules & its importance).	K	KH	Y	LGT, SGT, Home assignment	Written/Viva voce	
Topic 9: Minerals, electrolytes, Water and Acid base balance Number of competencies: (03) Number of competencies that require certification: (NIL)							
BC9.1	Describe the dietary sources, absorption, transport, and metabolism, Biochemical functions of Iron, Calcium and copper with its associated clinical disorders.	K	KH	Y	LGT, SGT, Home Assignment, Flipped class room	Written/Viva voce	
BC9.2	Discuss Magnesium, Zinc and Phosphorus along with its clinical significance and discuss the functions of trace elements	K	KH	Y	LGT, SGT, Home Assignment. / SDL	Written/Viva voce	
BC9.3	Describe the processes involved in maintenance of normal pH, water & electrolyte balance of body fluids and the derangements associated with them	K	KH	Y	LGT, SGT / SDL	Written/Viva voce	

Number	**COMPETENCY The student should be able to**	**Predominant Domain K/S/A/C**	**Level K/KH/SH/P**	**Core (Y/N)**	**Suggested Teaching Learning method**	**Suggested Assessment method**	**Number required to certify P**
Topic 10: Molecular Biology Number of competencies:(07) Number of competencies that require certification:(NIL)							
BC10.1	Describe nucleotides and nucleic acids and their clinical significance.	K	KH	Y	LGT, SGT	Written/Viva voce	
BC10.2	Describe briefly synthesis of purines in the body with special stress on salvage pathway.	K	KH	N	LGT, SGT /SDL	Written/Viva voce	
BC10.3	Describe the degradation of purines and its significance with associated disorders.	K	KH	Y	LGT, SGT	Written/Viva voce	

BC10.4	Describe in brief the major steps involved in Replication, Transcription, and translation.	K	KH	Y	LGT, SGT	Written/Viva voce	
BC 10.5	Describe the types of DNA repair, gene mutations and associated disorders.	K	KH	Y	LGT, SGT	Written/Viva voce	
BC10.6	Describe basic mechanism of regulation of gene expression	K	KH	Y	LGT, SGT /SDL	Written/Viva voce	
BC10.7	Describe applications of molecular technologies like recombinant DNA technology and PCR in the diagnosis and treatment of diseases. Briefly discuss microarray, FISH, CRISPR	K	KH	Y	LGT, SGT, Flipped class room	Written/Viva voce	
Topic 11: Organ Function tests and Hormones		**Number of competencies:(02)**				**Number of competencies that require certification:(NIL)**	
BC 11.1	Describe the function tests of kidney, liver, thyroid and adrenal glands and their clinical significance. Interpret the function tests report.	K,S	KH/SH	Y	LGT, SGT, Case studies / SDL	Written/Viva voce/Case studies/OSPE	

Number	**COMPETENCY** **The student should be able to**	**Predominant Domain K/S/A/C**	**Level K/KH/SH/P**	**Core (Y/N)**	**Suggested Teaching Learning method**	**Suggested Assessment method**	**Number required to certify P**
BC11.2	Enumerate the hormones and markers related to reproduction and reproductive health and their clinical interpretation (For e.g. LH, FSH, Prolactin, beta-HCG, Estrogen Progesterone, testosterone and AMH. Discuss importance of prenatal screening.	K	KH	Y	LGT, SGT / SDL, Flipped class room	Written/Viva voce/Direct observation/ OSPE	
Topic 12: Xenobiotic, oxidative stress and antioxidants		**Number of competencies:(03)**				**Number of competencies that require certification:(NIL)**	
BC12.1	Describe the role of xenobiotics in disease in health and disease	K	KH	Y	LGT, SGT	Written/Viva voce	
BC12.2	Describe the anti-oxidant defense systems in the body.	K	KH	Y	LGT, SGT	Written/Viva voce	

BC12.3	Describe the role of oxidative stress in the pathogenesis of conditions such as cancer, complications of diabetes mellitus and atherosclerosis	K	KH	Y	LGT, SGT / SDL	Written/Viva voce	
Topic 13: Miscellaneous Number of competencies:(05) Number of competencies that require certification:(NIL)							
BC 13.1	Describe oncogenesis, oncogenes & its activation with focus on p53 & apoptosis.	K	KH	Y	LGT, SGT	Written/Viva voce	
BC 13.2	Describe various Biochemical tumor markers and the Biochemical basis of cancer therapy.	K	KH	Y	LGT, SGT	Written/Viva voce	
BC13.3	Discuss briefly on HIV and Biochemical changes in AIDS.	K	KH	N	LGT, SGT	Written/Viva voce	
BC13.4	Discuss metabolism of alcohol with Biochemical changes and effects of chronic alcoholism.	K	KH	Y	LGT, SGT, SDL	Written/Viva voce	
BC13.5	Describe the role of Artificial Intelligence in clinical Biochemistry laboratory practices.	K	KH	N	LGT, SGT / SDL	Written/ Viva voce Logbook Record	

Number	**COMPETENCY The student should be able to**	**Predominant Domain K/S/A/C**	**Level K/KH/SH/P**	**Core (Y/N)**	**Suggested Teaching Learning method**	**Suggested Assessment method**	**Number required to certify P**
Topic 14: Biochemical Laboratory test / Practical Number of competencies: (24) Number of competencies that require certification : (11)							
14.1	Describe commonly used laboratory apparatus equipments, good / safe laboratory practice, Biomedical hazards & waste management.	K	KH	Y	LGT, SGT	Written/ Viva voce/ Direct observation	
BC14.2	Describe estimation of pH by pH meter or ABG analyser and interpretation of results with paper case scenarios.	K	KH	Y	LGT, SGT / Case discussion	Written/ Viva voce Direct observation/ OSPE	

BC14.3	Describe the physical properties, chemical constituents of normal urine and abnormal constituents of urine and Perform urine analysis to determine normal and abnormal constituents (including dipsticks method demonstration).	K,S	KH/P	Y	LGT, Small group Discussion / DOAP	Written/ Viva voce / DOAP	2
BC14.4	Identify abnormal constituents in urine, interpret the findings and correlate these with pathological states and prepare a urine report.	S	P	Y	DOAPs	Skill assessment / OSPE	1
BC14.5	Describe screening of urine for inborn errors & describe the use of paper chromatography	K	KH	Y	LGT, SGT	Written/ Viva voce/ Direct observation/ OSPE	
BC14.6	Describe the principles of Colorimetry & Spectrophotometry.	K	KH	Y	LGT, SGT	Written / Viva voce / Direct observation	
BC14.7	Perform estimation of glucose by manual / semi-automated analyzer method and demonstrate glucometer usage. and interpretation of results with clinical scenarios.	S	P	Y	DOAPs	Skill Assessment OSPE	1
BC14.8	Perform estimation of urea and calculate BUN and interpretation of results in clinical scenarios.	S	P	Y	DOAPs	Skill Assessment OSPE	1

Number	**COMPETENCY** **The student should be able to**	**Predominant Domain K/S/A/C**	**Level K/KH/SH/P**	**Core (Y/N)**	**Suggested Teaching Learning method**	**Suggested Assessment method**	**Number required to certify P**
BC14.9	Perform the estimation of serum creatinine and calculate creatinine clearance.	S	P	Y	DOAP	Skill Assessment OSPE	1
BC14.10	Perform estimation of uric acid in serum and interpretation of results with clinical scenarios.	S	P	Y	DOAPs	Skill Assessment OSPE	1
BC14.11	Perform estimation of serum proteins, albumin and A:G ratio	S	P	Y	DOAPs	Skill Assessment OSPE	1

BC14.12	Perform the estimation of serum total cholesterol	S	P	Y	DOAPs	Skill Assessment OSPE	1
BC14.13	Perform the estimation of serum Bilirubin by manual / semiautomated analyzer method.	S	P	Y	DOAP	Skills assessment / OSPE	1
BC14.14	Describe estimation of calcium and phosphorus and interpretation of results.	K	KH	Y	LGT, SGT, Demonstration	Written / Viva voce	
BC14.15	Describe the estimation Triglycerides, HDL and calculation of LDL and interpretation of results with clinical scenarios.	K	KH	Y	LGT, SGT	Written / Viva voce / OSPE (LDL Calculate)	
BC14.16	Describe the estimation of SGOT (AST) / SGPT (ALT) / Alkaline Phosphatase and interpretation of results with clinical scenarios.	K	KH	Y	LGT, SGT	Written/ Viva voce	
BC14.17	Describe briefly various body fluids & discuss the composition of CSF.	K	KH	Y	LGT, SGT	Written/ Viva voce	
BC14.18	Observe use of commonly used equipments/techniques in Biochemistry laboratory including: •pH meter •Paper chromatography of amino acid •Protein electrophoresis	K	KH	Y	Demonstration (SGT) & Lab Visit	Written/ Viva voce / Direct observation	

Number	**COMPETENCY** **The student should be able to**	**Predominant Domain K/S/A/C**	**Level K/KH/SH/P**	**Core (Y/N)**	**Suggested Teaching Learning method**	**Suggested Assessment method**	**Number required to certify P**

	•TLC, PAGE •Electrolyte analysis by ISE •ABG analyzer •ELISA •Immunodiffusion •Autoanalyser •DNA isolation from blood/ tissue						
BC14.19	Explain the basis and rationale of Biochemical tests done and interpretation of laboratory results in the following conditions: - Diabetes mellitus, - Obesity, - dyslipidaemia, - Fatty liver - myocardial infarction, - Renal failure, - Gout, - Nephrotic syndrome, - Jaundice, - Liver diseases, pancreatitis, disorders of acid- base balance, - Thyroid disorders, - Genetic disorders - Nutritional disorders - Vitamin deficiency disorders, - Disorders of Mineral metabolism, - Disorders of electrolyte metabolism.	K	KH	Y	LGT/ Clinical case studies discussion (SGT)	Written/ Viva voce / OSPE / Case studies interpretation	
BC14.20	Describe & Identify Pre-Analytical (especially order of draw, tourniquet technique), Analytical, Post Analytical errors.	S	SH	Y	LGT, SGT DOAP(clinical lab), Skill lab	Written/ Viva voce/ OSPE/ Direct observation/ OSPE	
Number	**COMPETENCY** **The student should be able to**	**Predominant Domain K/S/A/C**	**Level K/KH/SH/P**	**Core (Y/N)**	**Suggested Teaching Learning method**	**Suggested Assessment method**	**Number required to certify P**

BC14.21	Describe Quality control and identify basic L J charts in Clinical biochemistry lab.	S	SH	Y	LGT / SGT / DOAP (clinical lab)	Written/ Viva voce/ OSPE/ Direct observation/ OSPE	1
BC14.22	Describe performance of OGTT, Glucose Challenge Test and HbA1c and interpretation of results with clinical scenarios.	K	KH	Y	LGT, SGT	Written/ Viva voce/ OSPE /Direct observation/ Case studies interpretation.	
BC14.23	Calculate energy content of different food Items, identify food items with high and low glycaemic index and explain the importance of these in the diet.	K	KH	Y	LGT, SGT	Written/ Viva voce	
BC 14.24	Observe, Interpret and discuss the baseline, diagnostic, prognostic, and discharge investigations of clinical biochemistry.	K,A,S,C	SH	Y	ECE-SGT(Bedside/ Ward visit/ Medical record department	Logbook, reflections	

BLUEPRINT GRID FOR SETTING QUESTION PAPERS

BIOCHEMISTRY

PAPER I

SL No	TOPICS	WEIGHTAGE %
1	BASICS- BIOPHYSICS, CELL	5
2.	ENZYMES	18
3.	CARBOHYDRATE CHEMISTRY & METABOLISM	22
4.	LIPID CHEMISTRY & METABOLISM	20
5.	PROTEIN CHEMISTRY & METABOLISM	15
6.	METABOLISM & HOMEOSTASIS • FEED & FAST CYCLE • VITAMINS • BIOLOGICAL OXIDATION & ETC	10
7.	AETCOM 1.1 • professional qualities and roles of a physician • lifelong learning	5
	TOTAL	100

PAPER II

SL No.	TOPICS	WEIGHTAGE %
1.	METABOLISM & HOMEOSTASIS • NUCLEOTIDE • WATER & ELECTROLYTES • ACID BASE • MINERAL • HAEME • ORAGAN FUNCTION TESTS	22
2.	MOLECULAR BIOLOGY	28
3.	NUTRITION	15
4.	EXTRACELLULAR MATRIX	10
5.	ONCOGENESIS & IMMUNOCHEMISTRY	10
6.	BIOCHEMICAL LAB TESTS • NORMAL URINE • ELECTROPHORESIS & CHROMATOGRAPHY • CSF • BIOCHEMICAL TESTS IN DM, DYSLIPIDEMIA, MI, RENAL FAILURE, GOUT & VARIOUS CONDITIONS INVOLVING KIDNEY, JAUNDICE, LIVER, ACID BASE BALANCE, THYROID, PANCREAS, EDEMA…	10
7.	AETCOM 1.1 - role of a physician in health care System • physician's role and responsibility to society and the community	5
	TOTAL	100

PRACTICAL SCHEME- BIOCHEMISTRY

TOTAL – 80 MARKS

I. Major experiment - 25 Marks Mark Split up:

1. Provisional Diagnosis, Relevant Investigation with reference ranges - 5 Marks
2. Procedure - 5 Marks
3. Values - 5 Marks
4. Discussion -10 Marks

II. Minor experiment 25 Marks

Identification of 2 Abnormal constituents

X12.5marks Marks

Minor Ex eriment	Spilt up	Total
Abnormal Constituent I	Identification- 2.5 marks Procedure -5 marks Discussion -5 marks	12.5Marks
Abnormal Constituent II	Identification- 2.5 marks Procedure -5 marks Discussion -5 marks	12.5Marks

Total -25 Marks

Ill. Charts / Suggest investigation - 15 Marks
(3 charts x 5 Marks)

IV. OSPE (3 stations) - 15 Marks

(1 Performance stations - 1 x 5 Marks

2 Response station - 2 x 5 Marks)

Major experiment involving quantitative estimation of common blood analytes.

Minor experiment : Qualitative Identification of two abnormal constituents of urine only. Identification of physiologically important compound should not be tested as part of minor qualitative experiment.

Charts / Suggest investigation

(Laboratory values of biochemical parameters relevant to the case.
(eg. Diabetic history with GTT / Liver disorder with I-FT etc.)

OSPE

- Performance station should not be a repeat of Major or Minor experiment.
- Response station

Station 1- Nutrition or Equipment

Station 2- Display of investigations/tests with a clinical scenario followed by few questions

VIVA - 20 Marks

Carbohydrates - Chemistry & metabolism, Cell, Biological Oxidation, Oxidative phosphorylation, TCA cycle	5 Marks
Proteins - Chemistry & Metabolism, Enzymes, Plasma, Function tests Xenobiotics, Tumor markers, Oncogenes, Hormones, Hemostasis and Immunity.	5 Marks
Lipids - Chemistry & Metabolism, Vitamins, Nutrition, Porphyrins, Hemoglobin, Jaundice,	5 Marks
Nucleic acid Chemistry & Metabolism, Molecular Biology, Water, Electrolytes and AcidBalance	5 Marks
Total	20 Marks

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

KANYAKUMARI MEDICAL MISSION RESEARCH CENTRE

PHASE-I MBBS MASTER TIMETABLE FORMAT (39 weeks)

ACADEMIC YEAR 2025-26

Day	8.30-9.30	9.30-10.30	10.45-11.45	11.45-1	1-2	2-4 PRACTICAL (25 students in each batch)
MON	PHY (LGT)	ANAT (LGT)	ANAT DISSECTION		LUNCH	A - ANAT B & D- PHY C- BIO
TUE	BIO (SGT)	PHY (LGT)	ANAT DISSECTION			B - ANAT A & C- PHY D- BIO
WED	PHY(LGT)	BIO(LGT)	ANAT DISSECTION			C - ANAT B & D- PHY A- BIO
THUR	ANAT(LGT)	PHY(SGT)	ANAT DISSECTION			D - ANAT A & C- PHY B- BIO
FRI	BIO(LGT)	ANAT(LGT)	PHY (SGT/ SEMINAR/ TUTORIAL)			BIO (SGT/ SEMINAR/ TUTORIAL)
SAT	ANAT (LGT)	PHY(LGT)	COM MED LGT- 10 WEEKS; SGT- 10 weeks			FORMATIVE ASSESSMENT (ANAT/ PHY/ BIO)
FOURTH SATURDAY→ FAP (4 MONTHS); AETCOM MODULES (4 MONTHS) FIFTH SATURDAY → MENTOR-MENTEE & SPORTS						

LGT: Large group teaching; SGT: Small group teaching; SDL: Self-directed learning; ECE: Early Clinical Exposure; FAP: Family Adoption Program; AETCOM: Attitude Ethics & Communication

ANAT- ANATOMY PHY- PHYSIOLOGY BIO-BIOCHEMISTRY COM MED- COMMUNITY MEDICINE

Foundation 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**

AETCOM

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

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.

MBBS

SUGGESTED FORMAT FOR A THEORY PAPER-UNIVERSITY

Duration – 3 Hrs **Maximum Marks** – 100

QUESTION SL NO.	QUESTION PATTERN	NO. OF QUESTIONS	MARKS AWARDED	TOTAL MARKS
I	SCENARIO BASED MCQ	20	1	20
II	LONG STRUCTURED ESSAY QUESTION	1	10	10
III	REASONING QUESTION	5	3	15
IV	SHORT NOTES • 1-AETCOM • 4-APPLIED ASPECT • 3-DIAGRAMATIC REPRESENTATION • 1 – INTEGRATED TOPICS • 1- RECENT ADVANCES • 1- BASIC SCIENCES	10+1	5	55
			GRAND TOTAL	100

INTERNAL ASSESSMENT (Pg 39)

SL NO	SUBJECTS IN PHASE II	THEORY IA MARK	PRACTICAL IA MARK
1.	ANATOMY	100	100
2.	PHYSIOLOGY	100	100
3.	BIOCHEMISTRY	100	100
4.	COMMUNITY MEDICINE	25	25

THEORY INTERNAL ASSESSMENT FORMAT

Name of Institution:

Name of Examination:

Name of Department:

MBBS Batch: **Phase:** **Date:**

Sl.No.	Reg. No.	Name of student	FORMATIVE ASSESSMENT			CONTINUOUS INTERNAL ASSESSMENT				
			PCT 1	PCT 2	PRELIM THEORY (PAPER I& II)	CLASS TESTS	ATTENDANCE	SEMINAR/ MUSEUM STUDY	LIBRARY/ HOME ASSIGNMENT	TOTAL
								SELF DIRECTED LEARNING		
MAXIMUM MARKS			20	20	40	8	4	4	4	100

PRACTICAL/ CLINICAL INTERNAL ASSESSMENT FORMAT

Name of Institution:

Name of Examination:

Name of Department:

MBBS Batch: **Phase:** **Date:**

Sl.No.	Reg. No.	Name of student	FORMATIVE ASSESSMENT			CONTINUOUS INTERNAL ASSESSMENT						
			PCT 1	PCT 2	PRELIM PRACTICAL	RECORD/ PORTFOLIO	ATTENDANCE	CERTIFIABLE SKILL	AETCOM	SVL LAB	RESEARCH/ EXTRACURRICULAR	TOTAL
								LOGBOOK				
MAXIMUM MARKS			20	20	20	5	4	14	5	8	4	100

INTERNAL MARKS FOR ATTENDANCE

ATTENDANCE %	MARKS AWARDED	
	THEORY	PRACTICAL
100	4	4
91-99	3	3
85-90	2	2
81-84	1	1
>75 & <80	1	0

ELIGIBILITY CRITERIA

- **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.**
- **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.**

ATTENDANCE (THEORY & PRACTICAL)

- In each subject, the student shall have a minimum of 75% attendance in theory and 80% attendance in practical / clinical, separately to be eligible to appear for the University examinations.
- The student shall also have 75 % attendance in theory and 80% in practical / clinical of the non-examination going subjects in a phase, to be eligible to appear for the University examinations of that phase. e.g., Attendance for Gen. Medicine in Second Professional MBBS and Third Professional MBBS Part I.
- 75% attendance in Professional Development Programme (AETCOM Module) is required for eligibility to appear for final examination in each professional year.
- There shall be minimum of 80% attendance in family visits under Family adoption programme.
- **Calculation of attendance**
    - The Quarterly attendance has to be displayed on notice board for taking remedial measures, if necessary.

University Examinations

Eligibility to appear for University examination

i. Attendance as per Clause above.

ii. Internal examination marks as per Clause above.

iii. Learners must have completed the required certifiable competencies and completed the logbook for that phase of training including subjects which do not have a University Examination in that Professional year (e.g., Gen. Medicine in Second Professional and Third Professional Part I). iv. Submission of the logbook / case record to the department is required for eligibility to appear for the final examination of the subject.

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		

Mentor- mentee program

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).

PHASE I MBBS SYLLABUS IS PREPARED IN ACCORDANCE WITH NMC'S LATEST GUIDELINES & IS APPROVED BY CURRICULUM COMMITTEE OF KANYAKUMARI MEDICAL MISSION RESEARCH CENTER AS WELL AS THE BOARD OF STUDIES, St. JOSEPH UNIVERSITY

HEAD, DEPARTMENT OF ANATOMY (Name & signature with date)

HEAD, DEPARTMENT OF PHYSIOLOGY (Name & signature with date)

HEAD, DEPARTMENT OF BIOCHEMISTRY (Name & signature with date)

HEAD, DEPARTMENT OF COMMUNITY MEDICINE (Name & signature with date)

CO-ORDINATOR, MEDICAL EDUCATION UNIT (Name & signature with date)

VICE PRINCIPAL, KMMC (Name & signature with date)

DEAN, KMMC (Name & signature with date)