VELAMMAL MEDICAL COLLEGE
HOSPITAL AND RESEARCH INSTITUTE
MADURAI - 625009

Department of Anatomy

Sample Course File

Course File

First MBBS – 2020 -21

Department ofAnatomy

Prof. T. THIRUNAVUKKARASU, M.D.,D.A.,
Dean
Velammal Medical College Hospital
and Research Institute
"Velammal Village"
Madurai-Tuticorin Ring Road
Anuppanadi, Madurai-625 009, T.N.

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Course File

Department : Anatomy
Year to whom subject is offered : First year MBBS
Name of the Subject : Anatomy
Faculty names

Dr.R. Sumana :Professor & HOD
Dr. S Raja Shankar : Professor
Dr. Parineeta Suman : Professor
Mr. David Ebenezer : Assistant Professor
Dr. M Ram Kumar : Assistant Professor
Dr. P Veena Lakshmi : Assistant Professor
Dr. Pratheebau : Tutor
Dr. Karthikeya : Tutor
Dr. Jefferson : Tutor

Cover Page

Department of Anatomy

Name of the Subject : Anatomy
Program : Undergraduate
Year : First year MBBS

Prepared by

Name : Dr. Parineeta Suman
Sign :
Design : Associate Professor
Date : 15 Jan 2021

Approved by

Name : Dr. R Sumana
Sign :
Date : 15 Jan 2021

For QC only

Name :
Sign :
Design :
Date :

Syllabus

1.Goal

The broad goal of the teaching of undergraduate students in Anatomy aims at providing comprehensive knowledge of the gross and microscopic structure and development of the human body to provide a basis for understanding the clinical correlation of organs or structures involved and the anatomical basis for the disease presentations.

2. Specific Learning Objectives

2A. Knowledge:

At the end of the course the student shall be able to:

a. describe the normal disposition, clinically relevant interrelationships, functional and cross sectional anatomy of the various structures in the body;
b. identify and describe the microscopic structure and correlate elementary ultrastructure of various organs and tissues and correlate the structure with the functions as a prerequisite for understanding the altered state in various disease processes;
c. describe the basic structure and connections of the central nervous system to analyse the integrative and regulative functions of the organs and systems. The student shall be able to identify the site of gross lesions according to the deficits encountered.
d. demonstrate knowledge of the basic principles and sequential development of the organs and systems, recognise the clinical stages of development and the effects of common teratogens. The student shall be able to explain the developmental basis of the major variations and abnormalities.

2B. Skills:

At the end of the course the student shall be able to;

a. identify and locate describe all the structures of the body and mark the topography of the living anatomy.
b. Identify and locate structures in gross Anatomy Sections.
c. identify describe, depict normal appearance of the organs and tissues under the microscope;
d. Describe the principles of karyotyping and identify the gross congenital anomalies;
e. Describe the principles of newer imaging techniques like Ultra sound, MRI, Computerised Tomography Scan, Interpretation of plain and contrast X-rays.
f. Describe the clinical basis of some common clinical procedures i.e. intra-muscular and intravenous injection, lumbar puncture, kidney biopsy etc.

2C. Integration:

From the integrated teaching of other basic sciences, student shall be able to describe the regulation and integration of the functions of the organs and systems in the body and interpret the anatomical basis of disease processes. Horizontal integration can be done in common with basic science departments, and vertical integration can be done with clinical departments. For example, horizontal integration can be the study of liver. Along with Physiology and Biochemistry; and vertical integration can be the study of anatomical basis of varicose veins along with General Surgery.

3B. Teaching Methodology

Theory (Teaching-Learning methods)

1. Interactive Lecture (include buzz groups, self-assessment questions, quizzes, MCQs. One-minute paper)
2. Didactic Lecture- with a problem solving approach, with discussions of relevant clinical problems.
3. Seminar
4. Symposium
5. Role play and discussion on medical ethics topics
6. Self-directed learning

Practicals

1. Dissection
2. Small Group Discussion - Osteology, Surface marking, OSPE-Genetics, Radiology
3. Demonstrations - Histology slides, Embryology models
4. Case Discussion - Nerve Lesions, e.g. Facial Palsy, Radial Nerve Palsy

4.Theory Syllabus & Practical Syllabus

(1) General Anatomy Syllabus (12 Hours)

Topic and duration of study	Must Know 60%	Desirable to know 30%	Nice to know 10%
Introduction to anatomy			
Anatomical terminology	• An understanding of the various subdivisions of anatomy • Anatomical position • Anatomical planes • Terms of direction, relation, comparison, laterality & movement		
Introduction to bones	• Composition of bone and bone marrow • Regional classification of skeleton • Structural classification of bone • Distribution of spongy and compact bone in the body • Classification of bone according to shape • Classification of bone based on ossification • Parts of a long bone • Blood and nerve supply of a long bone • Special features of a sesamoid bone	• Laws of ossification, including direction of nutrient for a men and the growing end of the bone • Exceptions to the laws of ossification	
Introduction to joints	• Definition • Classification according to a. Structure- with subtypes and examples of		Types of sutures (Unnecessary detail)

	fibrous, cartilaginous and synovial joints b. Mobility c. Axes of movement Complex and compound join Nerve supply of joints-Hilton law Blood supply of joints		
Introduction to the muscular system	•Structural classification of muscle •Parts of a skeletal muscle **Differentiate tendon and Aponeurosis** •General principles about how attachments of muscles affect the joints they cross •Classification of muscle according to action (agonists, antagonists, synergists, fixators)	• Classification of muscle according to direction of muscle fibres and shape	Actions of muscles as compared to systems of levers • Shunt and spurt muscles (Unnecessary detail) • Classification of skeletal muscle according to type of contraction (Will be covered in Physiology)
Introduction to the cardiovascular system	• Classification into blood vascular system • Differentiate pulmonary and systemic circulation • Layers of any blood vessel • Types of blood vessels a. General differences between arteries and veins b. Functional difference between elastic, muscular arteries and arterioles	• Concepts of thrombosis, infarction, aneurysm • Concept of lymphoedema and spread of tumors via lymphatics and venous system	

	c. Function of metaarterioles, precapillary sphincters, arterio-venous anastomoses d. Microvasculature-types of capillaries and their functional significance Venous return a. Musculo-venous pumps b. Role of valves Definition and structure of a portal system Concept of anastomoses and collateral circulation Significance of end-arteries		
Lymphatic system	Components and function of the lymphatic system a. Structure of lymph capillaries b. Concept that lymphatics accompany blood vessels c. Concept that lymph ultimately drains into the venous system d. Function of lymph nodes in the lymphatic system		

For the following regions

1. Upper limb and
2. Lower limb
3. Thorax
4. Abdomen
5. Head & Neck

General concept of the parts of the bones to which each muscle is attached, and the relation of the fibres to the axes of the joints they cross in order to understand how a muscle causes a particular movement must be taught. Muscles may be discussed as muscle groups. Wherever clinical conditions are mentioned only the relevant anatomical basis is required.

(2) UPPER LIMB – SYLLABUS (100 hours)			
Topic	**Must Know**	**Desirable to know**	**Nice to know**
Overview	Major segments (e.g. shoulder)		
Bones Side determination (one feature for each of the opposite directions) Anatomical position Identification and description of features of each part Articulations	Clavicle Unique features Scapula Humerus Ulna Radius	Muscle attachments	
Bones	Articulated hand: Identify and name the various	Scaphoid fractures and avascular necrosis	

	bones in the articulated hand Prominent features of carpal bones o Tubercle of scaphoid o Crest of trapezium o Hook of hamate Parts of metacarpals and phalanges	Peculiarities of pisiform bone in its development, muscle attachment	
Pectoral Region	Muscles: Position, name of bones to which attached, nerve supply and actions of pectoralis major, pectoralis minor and Breast: Location, extent, deep relations Type of gland, structure Age changes Blood supply Lymphatic drainage Applied anatomy: Muscle attachments o Breast abscess o Breast cancer o Developmental anomalies	Attachments of subclavius	Clavipectoral fascia: Position, extent, structures piercing it
Axilla	Boundaries, contents	Brachial plexus:	

	▯▯Axillary Artery: o Origin, extent, course, parts,relations, branches ▯▯Axillary Vein: o Formation, extent, course, relations, tributaries ▯▯Brachial plexus: o formation, branches, relations,area of supply of branches,course and relations of terminal branches ▯▯Axillary lymph nodes: o Anatomical groups and their areas of drainage	- Variations - Prefixed and postfixed plexuses - Injuries – Erb palsy and Klumpke paralysis - Anaesthetic block Enlargement of axillary lymph nodes	
Back **Shoulder Region**	- Concept of layers of muscles of the back with emphasis on trapezius and latissimus dorsi - Injury of spinal accessory nerve, and axillary nerve - deltoid, rotator cuff muscles ▯▯Movements of the scapula and muscles involved Testing of serratus anterior	Specific attachments of trapezius and latissimus dorsi muscles Arterial anastomosis around the scapula and collateral circulation Dislocation of glenohumeral joint	Triangle of auscultation

	Shoulder joint – description of type, articular surfaces, capsule, synovial membrane, ligaments, relations, movements and muscles involved, blood and nerve supply, Subacromial bursa Injury of axillary nerve during intramuscular injections		
Free upper limb	Fascia of upper limb and compartments Veins of upper limb - Superficial and deep Lymphatic drainage Cutaneous nerves of upper limb Dermatomes of upper limb		
Arm and cubital fossa **Back of forearm**	Muscle groups of upper arm with emphasis on biceps and triceps Origin, course, relations, branches (or tributaries), termination of nerves and vessels Cubital fossa – boundaries, roof,	- Nerves liable to be involved in fracture of the humerus and clinical manifestations - Anastomosis around the elbow joint	Deep tendon reflexes of biceps and triceps

	floor, contents and relations of contents Venepuncture of cubital veins Saturday night paralysis		
Front of Forearm and Palm	Muscle groups of forearm with attachments, nerve supply and actions of: Flexor muscles in the superficial, intermediate and deep layers of the forearm Origin, course, relations, branches (or tributaries), termination of nerves and vessels Position for palpation of radial artery pulsations Flexor retinaculum and its attachments Carpal tunnel syndrome Palm and hand - thenar and hypothenar muscles, lumbricals and interossei - Ulnar and median claw hand	- Boundaries and contents of fascial compartments and spaces Dupuytren contracture of palmar aponeurosis Applied anatomy of fascial spaces Tenosynovitis	

	- Movements of the thumb and muscles involved - Long flexor tendons, fibrous flexor sheaths, ulnar bursa, radial bursa and digital synovial sheaths - Course and branches of blood vessels and nerves in the hand		
Back of forearm	Muscle groups of forearm with nerves in the hand attachments, nerve supply and actions of: extensor muscles of forearm Origin, course, relations, branches (or tributaries), termination of nerves and vessels Wrist drop - Compartments deep to extensor retinaculum and contents of each one		
Dorsum of hand	Extensor expansion - formation and muscles attached	Anatomical “snuff box”	
Joints of upper limb	Description of type, articular surfaces, capsule, synovial	Description of type, articular surfaces, capsule, synovial	Carrying angle Intercarpal joints intermatacarpal

	membrane, ligaments, relations movements, blood and nerve supply of: Elbow joint (including muscles involved in movements of the joint) Proximal and distal radio-ulnar joints (including muscles involved in movements of the joint) Wrist joint (including muscles involved in movements of the joint) First carpometacarpal joint (including muscles involved in movements of the joint)	membrane, ligaments, relations movements, blood and nerve supply of: Sternoclavicular joint Acromioclavicular joint Dislocation of radial head	joints Carpometacarpal joints,except first carpometacarpal joint Metacarpophalangeal joint Interphalangeal joint
Radiology	Anteroposterior and lateral views of bones and joints of upper limb		
Surface anatomy	Bony landmarks: Jugular notch, sternal angle, acromial angle, spine of the scapula - vertebral level of the medial end		

	▯▯Inferior angle of the scapula – vertebral level ▯▯Surface projection of: ▯▯Axillary artery ▯▯Axillary nerve ▯▯Cephalic and basilic vein ▯▯Brachial artery ▯▯Radial artery		
Embryology	▯▯Basic concept of development of upper limb		
10) GENERAL HISTOLOGY – SYLLABUS (40 hours)			
Topic	Must Know	Desirable to know	Nice to know
	Epithelium		
	Connective tissue proper Loose areolar tissue, dense connective tissue – regular, adipose tissue		
	Cartilage		
	Bone		
	Muscle		
	Blood vessels	Microvasculature	
	Lymphoid tissue		
	Nervous tissue		
8) GENERAL EMBRYOLOGY – SYLLABUS (8 hours)			
opic	Must Know	Desirable to know	Nice to know
Introduction	Terms used in embryology Stages of development		

Mitosis and Meiosis and	Primordial germ cells Concept of Chromosomal abnormalities – numerical / structural Gene mutation		
Gametogenesis	Oogenesis Spermatogenesis		
Uterine and ovarian cycles	Uterine and ovarian cycles Ovulation		
Fertilization and Blastocyst	Definition, Phases of fertilization, Results of fertilization, Contraceptive methods- barrier techniques, contraceptive pills, IUD, vasectomy and tubectomy, Infertility Embryonic and adult stem cells	Assisted reproductive technology – IVF, GIFT, ZIFT, ICSI	
Bilaminar germ disc	Implantation Abnormal implantation		
Trilaminar germ disc	Gastrulation		
Embryonic period	Definition, Neurulation – neural pores and the time of closure, Derivatives of each of the 3 germ layers, Somites	External appearance during 2nd month Induction and organogenesis	

Foetal membranes and Placenta	Structure, Placental circulation, Function, Placental barrier		Erythroblastosis fetalis and fetal hydrops
Amnion and umbilical cord	Structure and function	Amniotic fluid- hydramnios and oligohydramnios	Umbilical cord anomalies, Amniotic bands
Birth defects	Types of abnormalities – malformation, disruption, deformation, syndrome, Teratogens		
Prenatal diagnosis	Ultrasonography, Maternal serum screening, Amniocentesis, Chorionic villus sampling		
Twinning	Monozygotic and dizygotic twins, Conjoint twins		

(3) LOWER LIMB – SYLLABUS (80 hours)			
Topic	**Must Know**	**Desirable to know**	**Nice to know**
Overview	Regions		
Bones Side determination (one feature for each of the opposite directions) Anatomical position Identification and description of features of each part Articulations	Hip bone Femur - ossification of lower end Patella Tibia -Ossification of upper end Fibula Articulated foot		Neck-shaft angle
Fascia, veins, lymphatics cutaneous nerves of lower limb	Fascia lata Intermuscular septa Venous drainage of lower limb Varicose veins and deep vein thrombosis Musculovenous pump Lymphatic drainage of lower limb including areas draining into inguinal lymph nodes Dermatomes of lower limb Cutaneous nerves of lower limb	Enlarged inguinal lymph nodes Flexor, extensor and peroneal retinacula	
Front of thigh	Muscle groups with their attachment, nerve supply and actions	Psoas abscess Femoral hernia Palpation of femoral artery Knee jerk	

	▯▯Insertion of psoas major, and quadriceps femoris ▯▯Origin, course, relations, branches (or tributaries), termination of nerves and vessels ▯▯Boundaries, floor, roof and contents of femoral triangle		
Medial side of thigh	▯▯Muscle groups with their attachment, nerve supply and actions ▯▯Adductor canal		
Gluteal region	▯▯Muscle groups with their attachment, nerve supply and actions ▯▯Insertion of gluteus maximus, medius and minimus ▯▯Relations of piriformis and ischial spine ▯▯Origin, course, relations, branches (or tributaries), termination of nerves and vessels - Liability of sciatic nerve to injury during gluteal intramuscular injections	- Trendelenburg sign - Pudendal block	

Back of thigh	Muscle groups with their attachment, nerve supply and actions Position, name of bones to which attach nerve supply and actions of hamstrings, Origin, course, relations, branches (or tributaries), termination of nerves and vessels		
Hip joint	Description of type, articular surfaces, capsule, synovial membrane, ligaments, relations, movements and muscles involved, blood and nerve supply, bursae around the joint, Fracture neck of femur	Dislocation of hip joint Surgical hip replacement	
Popliteal fossa	Boundaries, roof, floor, contents and relations of contents		
Front of leg Anterior compartment, Dorsum of foot	 Popliteal pulse		

and Lateral Compartments	▯▯Position, attachments, nerve supply and actions of popliteus ▯▯Muscle groups with their attachment, nerve supply and actions of muscles in each compartment ▯▯Origin, course, relations, branches (or tributaries), termination of nerves and vessels ▯▯Injury to common peroneal nerve and foot drop		
Knee joint	▯▯Description of type, articular surfaces, capsule, synovial membrane, ligaments, relations, movements and muscles involved, blood and nerve supply, bursae around the joint, ▯▯Locking and unlocking of the knee joint	▯▯Anastomosis around the knee ▯▯Knee joint injuries ▯▯Bursitis in knee region ▯▯Osteoarthritis	
Back of leg	▯▯Muscle groups with their attachment, nerve	▯▯Ankle jerk	Rupture of calcaneatendon

	supply and actions of muscles in superficial and deep muscle groups Origin, course, relations, branches (or tributaries), termination of nerves and vessels Relations of ankle joint "Peripheral heart" Tendocalcaneus		
Sole of foot	Basic organization Factors maintaining and importance of arches of the foot	Flat foot, Club foot Plantar fasciitis	
Joints of lower limb	Description of type, articular surfaces, capsule, synovial membrane, ligaments, relations, movements and muscles involved, blood and nerve supply, bursae around the: Tibiofibular joints Ankle joint	Subtalar and transverse tarsal joints	

Radiology	AP and Lateral views of bones and joints of lower limb: Lateral view of the foot- identification of bones of the foot	Shenton's line	
Surface Anatomy	Bony landmarks: 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, Palpation of pulsations of arteries- femoral, popliteal, posterior tibial and dorsalis pedis Mid inguinal point Midpoint of the inguinal ligament Femoral artery, vein and nerve,		Nelaton's line, Shoemaker's line Bryant's triangle

	Saphenous opening Dorsalis pedis artery, Sciatic nerve, tibial and common peroneal nerves, deep peroneal nerve, great and small saphenous veins		
	Embryology Basic concept of development of lower limb		
(5) ABDOMEN & PELVIS – SYLLABUS (135 hours)			
Abdominal wall	Planes		
Anterior abdominal wall Inguinal canal	Transpyloric, Transtubercular, Subcostal Lateral vertical Linea alba, Linea semilunaris Fascia of anterior abdominal wall Regions and quadrants of abdomen Nerves & blood vessels of abdominal wall Muscles Name of the muscles, direction of fibers, their actions and nerve supply, neurovascular plane	Abdominal incisions Collateral routes for abdominopelvic venous blood Attachments of muscles of anterior abdominal wall	

	Rectus sheath formation, its contents Superficial inguinal ring, Deep inguinal ring Inguinal ligament Attachment & modifications Extent, boundaries, contents		
Male external genitalia Posterior abdominal wall Muscles of the back (intrinsic muscles)	Inguinal (Hasselbach's) triangle Inguinal hernia Testis Coverings, internal structure, blood supply, nerve supply, lymphatic drainage, descent of testis, cryptorchidism, ectopic testis Epididymis Parts Muscles – Name, attachments, nerve supply and action Lumbar plexus – root value, formation & branches Position, nerve supply and action	linical anatomy Varicocoele Penis Parts, components, blood supply and lymphatic drainage Phimosis, Circumcision Lymphatic spread in carcinoma testis and scrotum Cremasteric reflex, Rupture urethra, Ligaments of penis Thoracolumbar fascia Clinical anatomy Psoas abscess	

Peritoneal cavity	Lesser sac Boundaries and recesses, Epiploic foramen Greater sac Boundaries of subdiaphragmatic spaces Definition of ligaments, omentum and mesentery The mesentery Attachment and contents, Rectouterine pouch, Uterovesical pouch Rectovesical pouch	Duodenal recesses Caecal recesses Clinical anatomy Ascitis, Peritonitis Subphrenic abscess	
Viscera	Name, position, external and internal features, important peritoneal and other relations, blood supply, nerve supply, lymphatic drainage and applied aspects of: Spleen, Abdominal part of oesophagus Stomach, Liver & its vascular segments Gall bladder, Pancreas, Small intestines Caecum, Appendix, Colon, Kidneys, Ureter Suprarenals, Extrahepatic bilary apparatus	Clinical anatomy: Importance of splenic notch during palpation of spleen Accessory spleens Anatomical basis of o Kehr's sign (Referred pain in the left shoulder during splenic infarction) o different types of vagotomy in gastric ulcer o Liver biopsy – site of needle puncture o Referred pain in cholecystitis	

		o obstructive jaundice in biliary tract obstruction o Referred pain around umbilicus in acute appendicitis o Radiating pain of kidney to groin Lymphatic spread in carcinoma stomach – special emphasis on Trosier's sign Clinical importance of Calot's triangle	
Blood vessels & nerves	Veins: Formation, course relations and tributaries of- Portal vein, portosystemic anastomosis o haemetemesis, malena, caput medusae in portal hypertension Inferior vena cava, Renal vein Arteries Origin, course, important relations and branches of abdominal aorta, coeliac artery, superior mesenteric artery, inferior mesenteric artery,	Concept of superior mesenteric plexus, inferior mesenteric plexus, renal plexus, superior hypogastric plexus, inferior hypogastric plexus Reason for preserving 1st lumbar sympathetic ganglion in lumbar sympathectomy	

	common iliac artery, external iliac artery Autonomic nervous system Coeliac ganglion		
Diaphragm	Attachments, openings, nerve supply & action	Abnormal openings and diaphragmatic hernia	
Pelvis	Muscles: Levator ani & coccygeus (pelvic diaphragm), Obturator internus, Piriformis Viscera: Position, features, important peritoneal and other relations, blood supply, nerve supply, lymphatic drainage and Clinical aspects of- Urinary bladder & pelvic part of ureter, Rectum, Anal canal Prostate, age changes Seminal vesicle, Vas deferens, Ejaculatory ducts, Male urethra Uterus & its supports, Fallopian tube Ovary, Vagina, Female urethra	Clinical anatomy Anatomical basis of : o suprapubic cystotomy o Urinary obstruction in beni gn pr ostatic hypertrophy o Retroverted uterus o Prolapse uterus Neurological lesions of the bladder o Autonomous neurogenic bladder o Atonic bladder o Automatic bladder Lobes involved in benign prostatic hypertrophy & prostatic cancer, Vasectomy	

	Blood vessels: Origin, course, important relations and branches of - Internal iliac artery Nerves: Structures palpable during o Vaginal examination o Rectal examination Internal and external haemorrhoids Anal fistula	Tubal pregnancy, Tubal ligation Sacral plexus Branches Pelvic splanchnic nerve	
Perineum	Extent and Subdivisions of perineum Superficial perineal pouch - boundaries and contents Deep perineal pouch – boundaries and contents Perineal body, Perineal membrane Ischiorectal / ischioanal fossa, Perianal abscess and anal fissure	Clinical anatomy Perineal tear / episiotomy	
Joints	Curvatures of the vertebral column Type, articular ends, ligaments and movements	Scoliosis, lordosis, prolapsed disc, spondylolisthesis, spina	

	of: Intervertebral joints, Sacroiliac joints, Pubic symphysis Lumbar puncture: Site, direction of the needle, structures pierced during the lumbar puncture	bifida	
Cross-sectional anatomy	Cross-section at the level of L1 (transpyloric plane)	Cross-sectional anatomy of abdomen and pelvis	
Microanatomy	Gastro-intestinal system: Oesophagus, Fundus of stomach, Pylorus of stomach, Duodenum, Jejunum, Ileum, Large intestine, Appendix, Liver, Gall bladder, Pancreas, Suprarenal gland Urinary system: Kidney, Ureter, Urinary bladder Male Reproductive System: Testis, vas deferens Prostate Female reproductive system: Ovary, uterus, Uterine tube, cervix, Placenta, umbilical cord	Cardio-oesophageal junction Epididymis, seminal vesicle, Uterus - Proliferative and secretory phases of Corpus luteum	

Vision and Mission of the Department of Anatomy

Vision

The Vision of the Department is to be a top-ranked research-intensive academic department in the discipline of Anatomy, expanding on our record of innovation and excellence in evidence-based integrative teaching, Research and beyond.

Mission

The Mission of the Department of Anatomy is to provide the best in class training to students suiting the requirements of all types of learners to achieve the best of their abilities in basic and applied physiology by adopting the most relevant teaching – learning methods and need based quality research works.

To set up a state-of-the-art research & development facility in the department and build a team of highly qualified, dedicated & enthusiastic faculty, eager to accept challenges & experimentation in teaching technology and scientific research.

Program Educational Objectives

At the end of MBBS program, the medical student should be able to:

PEO1. Diagnose and manage common health problems of the individual and the community, commensurate with his/her position as a member of the health team at the primary, secondary or tertiary levels, using his/her clinical skills based on history, physical examination and relevant investigations.

PEO2. Practice preventive, promotive, curative and rehabilitative medicine in respect to the commonly encountered health problems.

PEO3. Appreciate rationale for different therapeutic modalities, be familiar with the administration of the "essential drugs" and their common side effects.

PEO4. Appreciate the socio-psychological, cultural, economic and environmental factors affecting health and develop humane attitude towards the patients in discharging one's professional responsibilities.

PEO5. Be familiar with the various National Health Programs, and the ways in which they are being implemented.

PEO.6 Demonstrate communication skills, both verbal and written to establish effective communication with the clients (patients, relatives, and general public), health team partners, and scientific community.

PEO.7 Develop attitude for self-learning and acquire necessary skills including the use of appropriate technologies, for pursuing self-directed learning for a life time.

Program Outcomes

At the end of the M.B.B.S. training program the student should have the requisite knowledge, skills, attitudes, values and responsiveness, so that they may function appropriately and effectively as a Basic Doctor, Physicians of first contact for the community in the primary care setting both in urban as well as rural areas of our country.

To fulfil these objectives the doctor must be able to function appropriately and effectively in the following roles

PO1. Clinician, who understands and provides preventive, promotive, curative, palliative and holistic care with compassion.

PO.2 Leader and member of the health care team and system with capabilities to collect, analyse and synthesize health data.

PO.3 Communicator with patients, families, colleagues and community.

PO.4 Lifelong learner committed to continuous improvement of skills and knowledge.

PO.5 Professional, who is committed to excellence, is ethical, responsive and accountable to patients, community, and profession.

Anatomy Course Objectives

General Anatomy

GA 1. Describe the various Sub divisions of anatomy and discuss the History of Anatomy

GA 2. Explain and demonstrate Anatomical position and planes, Describe the terms used in relation to trunk neck face, Upper limb, Lower limb, terms related to movements in upper limb,in lower limb, in the neck, in the trunk

GA 3. Describe the terms used in relation commonly used in embryology and comparative Anatomy, Describe the terms used for describing muscles, vessels & bone features, Describe the twelve systems of the body

GA 4. Discuss the divisions of skeletal system, definition and function of bone, Describe the classification of bones according to shape, developmental classification, regional and structural classification,

GA 5. Explain the gross structure of an adult long bone, Explain the parts of a young growing bone, Explain the blood supply and nerve supply of bones, Discuss the development and ossification of bones, Discuss the medicolegal and anthropological aspects of bone

GA 6. Discuss the general features of cartilage, types of cartilage, comparison between bone and cartilage, difference between the three types

GA 7. Discuss the Definition and Classification of joints, Discuss fibrous & cartilaginous joints in detail with examples and diagram

GA 8. Discuss synovial joints in detail with examples and diagram, structure of synovial joint, Describe the nerve supply of joint, discuss the Hilton's law

GA 9. Describe the types of muscles, structure of striated muscle. Discuss the naming of muscles, nerve supply of skeletal muscles and action of muscles

GA 10. Define vascular system, Define lymphatic system, Differentiate between blood vascular and lymphatic system, Mention the types of circulation, Define pulmonary circulation, Define systemic circulation, Differentiate between pulmonary and systemic circulation, Describe portal system giving examples

GA 11. List general differences between arteries & veins, Explain functional difference between elastic, muscular arteries and arterioles, Brief the differences among the arteries

Explain the different tissues present in different arteries, Explain the importance of having different types of arteries in different places

GA 12. Describe the concept of anastomoses and collateral circulation with significance of end-arteries, Explain function of meta-arterioles, precapillary sphincters, arterio-venous anastomoses, Define thrombosis, infarction & aneurysm

GA 13. List the components and functions of the lymphatic system, Describe structure of lymph capillaries & mechanism of lymph circulation, Explain the concept of lymphoedema and spread of tumors via lymphatics and venous system

GA 14. Classification of nervous system, Describe general plan of nervous system with components of central, peripheral & autonomic nervous systems, List components of nervous tissue and their functions, Name the types of cells present in nervous tissue, Give the functions of different cells in nervous tissue

GA 15. Describe parts of a neuron and classify them based on number of neurites, size & function, Describe structure of a typical spinal nerve, Describe principles of sensory and motor innervation of muscles, Describe concept of loss of innervation of a muscle with its applied anatomy, Define and differentiate anaesthesia and analgesia

GA 16. Describe various type of synapse, Define and classify the synapses, Define ganglia , Describe differences between sympathetic and spinal ganglia

UPPER LIMB:

UL 1. Pectoral region, List out the important land marks , Name the muscles present in this region , Give the attachments of individual muscles , Describe attachment, nerve supply & action of pectoralis major and pectoralis minor, List out the important relations to Pectoralis minor, Define the clavipectoral fascia & name the structures piercing, Actions of pectoralis major,minor and serratus anterior

UL 2. Breast: location, extent, deep relations, structure, age changes, blood supply, lymphatic drainage, microanatomy and applied anatomy, Explain anatomical basis of enlarged axillary lymph nodes

UL 3. Describe, identify and demonstrate formation, branches, relations, area of supply of branches, course and relations of terminal branches of brachial plexus, Explain variations in formation of brachial plexus, Explain the anatomical basis of clinical features of Erb's palsy and Klumpke's paralysis.

UL 4. Axilla : Boundaries and contents, Describe the anatomical groups of axillary lymph nodes and specify their areas of drainage, Identify, describe and demonstrate the origin, extent, course, parts, relations and branches of axillary artery & tributaries of vein.

UL 5. Back: Muscles of the back, Describe, identify and demonstrate the position, attachment, nerve supply and actions of trapezius and latissimus dorsi, Describe the arterial anastomosis around the scapula and mention the boundaries of triangle of auscultation & Lumbar triangle

UL 6. List out the muscles connecting scapula with vertebral column, Name the muscles connecting scapula with humerus. Define the boundaries and contents of different spaces, Describe and identify the deltoid and rotator cuff muscles, Describe & demonstrate attachment of serratus anterior with its action, Explain the Winging of scapula

UL 7. Describe and demonstrate shoulder joint for– type, articular surfaces, capsule, synovial membrane, ligaments, relations, movements, muscles involved, blood supply, nerve supply and applied anatomy. Explain anatomical basis of Injury to axillary nerve during intramuscular injections

UL 8. Muscles of arm, forearm, hand and their actions. Describe and demonstrate muscle groups of upper arm with emphasis on biceps and triceps brachii

UL 9. Identify & describe origin, course, relations, branches (or tributaries), termination of important nerves and vessels in arm, Describe the anatomical basis of Venepuncture of cubital veins, Describe the anatomical basis of Saturday night paralysis

UL 10. Cubital fossa- boundaries and contents, Explain the basis for measuring blood pressure Describe the anastomosis around the elbow joint

UL 11. Course and branches and applied anatomy of ulnar, median, radial, musculocutaneous and axillary nerve.

UL 12. Describe and demonstrate important muscle groups of ventral forearm with attachments, nerve supply and actions

UL 13. Identify & describe origin, course, relations, branches (or tributaries), termination of important nerves and vessels of forearm

UL 14. Flexor and extensor retinaculum, Explain the formation of carpal tunnel, List the structures passing superficial to flexor retinaculum, List the structures passing through carpal tunnel

UL 15. Explain anatomical basis of carpal tunnel syndrome, Identify & describe compartments deep to extensor retinaculum, Identify & describe extensor expansion formation

UL 16. Identify & describe small muscles of hand. Also describe movements of thumb and muscles involved, Describe & demonstrate movements of thumb and muscles involved, Identify & describe course and branches of important blood vessels and nerves in hand, Describe anatomical basis of Claw hand

UL 17. Applied anatomy of fascial spaces , Identify & describe fibrous flexor sheaths, ulnar bursa, radial bursa and digital synovial sheaths

UL 18. Identify, describe and demonstrate important muscle groups of dorsal forearm with attachments, nerve supply and actions

UL 19. Identify & describe origin, course, relations, branches (or tributaries), termination of important nerves and vessels of back of forearm, Describe the anatomical basis of Wrist drop

UL 20. Describe the fasciae over upper limb, Describe the modification of deep fascia in the form of intermuscular septa

UL 21. Describe the venous drainage by two group of veins, State how the superficial veins are used as life lines, Lymphatic drainage of upper limbs, State the group of axillary lymph nodes and the areas drained by them, Describe dermatomes of upper limb

UL 22. Identify & describe the type, articular surfaces, capsule, synovial membrane, ligaments, relations, movements, blood and nerve supply of shoulder joint

Ul 23. Identify & describe the type, articular surfaces, capsule, synovial membrane, ligaments, relations, movements, blood and nerve supply of elbow joint

Ul 24. Identify & describe the type, articular surfaces, capsule, synovial membrane, ligaments, relations, movements, blood and nerve supply of proximal and distal radio-ulnar joints

Ul 25. Identify & describe the type, articular surfaces, capsule, synovial membrane, ligaments, relations, movements, blood and nerve supply of wrist joint

Ul 26. Identify & describe the type, articular surfaces, capsule, synovial membrane, ligaments, relations, movements, blood and nerve supply of first carpometacarpal joint

UL 27.Describe Sternoclavicular joint, Acromioclavicular joint, Carpometacarpal joints & Metacarpophalangeal joint

Radiology

UL 28. Identify the bones and joints of upper limb seen in anteroposterior and lateral view radiographs of shoulder region, arm, elbow, forearm and hand

Surface markings

UL 29. Identify & demonstrate important bony landmarks of upper limb: Jugular notch, sternal angle, acromial angle, spine of the scapula, vertebral level of the medial end, Inferior angle of the scapula

UL 30. 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

Osteology

UL 31. Identify the given bone, its side, important features & keep it in anatomical position

Identify the pectoral girdle bones, Identify the side of Clavicle, Name the features, Name the joints formed by clavicle , Enumerate peculiarities of clavicle, Demonstrate important muscle attachment on the given bone Show the sites of important muscles on clavicle

UL 32. Identify the scapula and its features, Identify & describe joints formed by the given bone,

UL 33. Identify the humerus and its features, Identify & describe joints formed by the given bone,

UL 34. Identify the radius and its features, Identify & describe joints formed by the given bone,

UL 35. Identify the ulna and its features, Identify & describe joints formed by the given bone,

UL 36. Identify and name various bones in articulated hand, Specify the parts of metacarpals and phalanges and enumerate the peculiarities of pisiform, Explain about the numbering of metacarpal and phalangeal bones Name bones forming hand (Carpal, Metacarpal and Phalanges), Describe scaphoid fracture and explain the anatomical basis of avascular necrosis

LOWER LIMB:

OSTEOLOGY-

LL 1. Identify the given bone, its side, important features & keep it in anatomical position

Show the hip bone and show the pubic tubercle; anterior superior iliac spine; iliac crest; tubercle of iliac crest

LL 2. Show the femur bone and show head; neck; greater and leser trochanters; linea aspera; condyles; epicondyles; adductor tubercle; supracondylar ridge

LL 3. Show the tibia and the following features condyles; tibial tuberosity, condylar articular area; intercondylar eminence and shaft

LL 4. Show the fibula and the following features shaft, head and malleolus

LL 5. Describe the importance of ossification of lower end of femur & upper end of tibia

LL 6. Identify and name various bones in the articulated foot with individual muscle attachment

LL 7. Show the articulated foot and explain the different bones forming foot

Show the following features in different bones, Calcaneus – medial and lateral processes of tuber calcaneus; sustentaculum tali.

LL 8. Talus - navicular tuberosity, cuboid groove - for peroneus longus tendon, fifth metatarsal bone styloid process (tuberosity).

LL 9. Front & Medial side of thigh Describe and demonstrate origin, course, relations, branches (or tributaries), termination of important nerves and vessels of anterior thigh, Describe and demonstrate major muscles with their attachment, nerve supply and actions,

LL 10. Describe the superficial fascia & its modification, Fascia lata, Explain the Holder's line

LL 11. Boundaries and contents of femoral triangle, Define femoral sheath, Explain anatomical basis of Psoas abscess & Femoral hernia, Describe the femoral ring

LL 12. Femoral, Obturator, Sciatic , Tibial and common Peroneal nerves- course and branches & their applied anatomy. Course & branches of femoral artery & profunda femoris artery.

LL 13. Muscles of gluteal region, thigh, leg and foot, Describe and demonstrate origin, course, relations, branches (or tributaries), termination of important nerves and vessels of gluteal region, Describe the attachments of gluteus maximus, List the structures present deep to gluteus maximus, Explain the structures how they related to piriformis muscle, Enumerate the arteries & their origin, Name the nerves present in this region

LL 14. Describe anatomical basis of sciatic nerve injury during gluteal intramuscular injections, Explain the anatomical basis for the intramuscular, injection in Gluteal region

LL 15. Explain the anatomical basis of Trendelenburg sign, Brief the Trendelenburg sign,

LL 16. Describe and demonstrate the hamstrings group of muscles with their attachment, nerve supply and actions

LL 17. Describe and demonstrate the origin, course, relations, branches (or tributaries), termination of important nerves and vessels on the back of thigh

LL 18. Describe anatomical basis of complications of fracture neck of femur

LL 19. Describe and demonstrate major muscles of anterolateral compartment of leg with their attachment, nerve supply and actions, Give the attachment of extensor retinaculum

LL 20. Describe and demonstrate origin, course, relations, branches (or tributaries), termination of important nerves and vessels of anterior compartment of leg, Explain to locate the dorsalis pedis artery

LL 21. Explain the anatomical basis of foot drop

LL 22. Describe and demonstrate adductor canal with its content

LL 23. Describe and demonstrate the boundaries, roof, floor, contents and relations of popliteal fossa

LL 24. 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 , Describe dislocation of hip joint and surgical hip replacement

LL 25. Describe and demonstrate the type, articular surfaces, capsule, synovial membrane, ligaments, relations, movements and muscles involved, blood and nerve supply, bursae around the knee joint

LL 26. Explain the anatomical basis of locking and unlocking of the knee joint, Describe knee joint injuries with its applied anatomy, Explain anatomical basis of Osteoarthritis

LL 27. Movements of hip,knee,ankle and subtalar joints.

LL 28. Describe and demonstrate the major muscles of back of leg with their attachment, nerve supply and actions, Describe and demonstrate the origin, course, relations, branches (or tributaries), termination of important nerves and vessels of back of leg, Explain the concept of “Peripheral heart”, Explain the anatomical basis of rupture of calcaneal tendon

LL 29. Sole-List out the muscles present in each layer, Name the nerves & vessels present in it

LL 30. Arches of the foot.- Describe factors maintaining importance arches of the foot with its importance, Describe the Skeletal frame work of foot, Name the types of arches present, Describe the factors maintaining longitudinal arches, Describe the factors maintaining transverse arches

LL 31. Explain the anatomical basis of Flat foot & Club foot, Name the arch involved in Flat foot condition, Name the structures involved for flat foot condition, Describe club foot, Mention the types of club foot

LL 32. Explain the anatomical basis of Metatarsalgia & Plantar fasciitis,

LL 33. 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

LL 34. Describe the subtalar and transverse tarsal joints

LL 35. Describe and demonstrate Fascia lata, Venous drainage, Lymphatic drainage, Retinacula & Dermatomes of lower limb

LL 36. Mention about the arrangement of veins in lower limb , State how the three types of veins help in the drainage of lower limb , Explain the origin and termination of great saphenous vein, Name the tributaries of great saphenous vein, Explain the role of perforator in venous drainage, Describe the varicose veins and how the perforator plays a role in varicose veins, Explain anatomical basis of varicose veins and deep vein thrombosis

LL 37. State the arrangement of superficial inguinal nodes and the areas drained by the different groups, Mention the deep lymph nodes in different regions and the area drained by them, Explain the condition of elephantiasis, Explain anatomical basis of enlarged inguinal lymph nodes

LL 38. Explain the attachment of flexor retinaculum and the structures passing deep to it, Describe the attachments of superior and inferior peroneal retinacula, Explain the attachments of superior and inferior extensor retinaculum

LL 39. Identify the bones and joints of lower limb seen in anteroposterior and lateral view radiographs of various regions of lower limb

- Show the anteroposterior view of hip joint & train to identify the different parts of the joint in X-rays
- Show the anteroposterior view of Knee joint & train to identify the different parts of the joint in X-rays
- Show the anteroposterior view of ankle joint & train to identify the different parts of the joint in X-rays

LL 40. 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

LL 41. Identify & demonstrate palpation of femoral, popliteal, posterior tibial, anterior tibial & dorsalis pedis blood vessels in a simulated environment

LL 42. Identify & demonstrate Palpation of vessels (femoral, popliteal,dorsalis pedis,post tibial)

LL 43. Surface projection of: femoral nerve, Saphenous opening, Sciatic, tibial, common peroneal & deep peroneal nerve, Great and small saphenous veins

LL 44. Describe basic concept of development of lower limb

THORAX:

T h 1. Identify and describe the salient features of sternum, typical rib, 1st rib and typical thoracic vertebra- Describe the identifying features, Describe the muscle attachments, Related applied anatomy

Th 2. Identify & describe the features of 2nd,11th & 12th ribs, 1st 11th and 12th thoracic vertebrae, Describe the identifying features, Describe the muscle attachments, Related applied anatomy

Th 3. Describe & demonstrate the boundaries of thoracic inlet, cavity and outlet, Describe the structures forming boundaries, Mention the structures passing, Related applied anatomy of thoracic inlet, cavity and outlet

Th 4. Describe & demonstrate extent, attachments, direction of fibres, nerve supply and actions of intercostal muscles(ICM), Able to identify each ICM, Related applied anatomy of intercostal muscles

Th 5. Describe & demonstrate origin, course, relations and branches of a typical intercostal nerve

Th 6. Mention origin, course and branches/ tributaries of: anterior & posterior intercostal vessels, internal thoracic vessels

Th 7. Mention the origin, course, relations and branches of atypical intercostal nerve, superior intercostal artery, subcostal artery

Th 8. Describe & demonstrate type, articular surfaces & movements of manubriosternal, costovertebral, costotransverse and xiphisternal joints, Describe the type of joint, Describe the articular surfaces, Describe the possible movements

Th 9. Describe & demonstrate mechanics and types of respiration

Th 10. Describe costochondral and interchondral joints Describe the type of joint, Describe the articular surfaces, Describe the possible movements

Th 11. Mention boundaries and contents of the superior, anterior, middle and posterior mediastinum

Th 12. Describe & demonstrate subdivisions, sinuses in pericardium, blood supply and nerve supply of pericardium

Th 13. Describe & demonstrate external and internal features of each chamber of heart, Able to show external and internal features in the specimen, Related applied anatomy

Th 14. Describe & demonstrate origin, course and branches of coronary arteries

Th 15. Describe anatomical basis of ischaemic heart disease- Mention the cause, Clinical features , Describe the structure involved, Pathogenesis, Treatment

Th 16. Describe & demonstrate the formation, course, tributaries and termination of coronary sinus

Th 17. Describe the fibrous skeleton of heart- Structures forming, Mention its function

Th 18. Mention the parts, position and arterial supply of the conducting system of heart

Th 19. Describe & demonstrate the external appearance, relations, blood supply, nerve supply, lymphatic drainage and applied anatomy of oesophagus

Th 20. Describe & demonstrate the extent, relations tributaries of thoracic duct and enumerate its applied anatomy

Th 21. Describe & demonstrate origin, course, relations, tributaries and termination of superior vena cava, azygos, hemiazygos and accessory hemiazygos veins

Th 22. Mention the extent, branches and relations of arch of aorta & descending thoracic aorta

Th 23. Identify & Mention the location and extent of thoracic sympathetic chain, Related applied anatomy

Th 24. Describe the splanchnic nerves

Th 25. Mention the extent, relations and applied anatomy of lymphatic duct

Th 26. Mention the blood supply, lymphatic drainage and nerve supply of pleura, extent of pleura and describe the pleural recesses and their applied anatomy

Th 27. Identify side, external features and relations of structures which form root of lung & bronchial tree and their clinical correlate

Th 28. Describe a bronchopulmonary segment- Definition, Number and names on each side, Structures supplying it, Related applied anatomy

Th 29. Identify phrenic nerve & describe its formation & distribution, Related applied anatomy

Th 30. Mention the blood supply, lymphatic drainage and nerve supply of lungs, Related applied anatomy

Th 31. Describe the extent, length, relations, blood supply, lymphatic drainage and nerve supply of trachea, Related applied anatomy

Th 32. Identify, draw and label a slide of trachea and lung- Identify the slide, Two points of identification , Draw and label the diagram

Th 33. Describe development of pleura, lung & heart. Stages in development of lung

Th 34. Development of chambers, septum & valves of heart

Th 35. Describe fetal circulation and changes occurring at birth

Th 36. Describe embryological basis of: Atrial septal defect, Ventricular septal defect, Fallot's tetralogy & Tracheo-oesophageal fistula

Th 37. Describe developmental basis of congenital anomalies, transposition of great vessels, dextrocardia, patent ductus arteriosus and coarctation of aorta

Th 38. Mention development of aortic arch arteries, SVC, IVC and coronary sinus, Developmental anomalies

Th 39. Identify structures seen on a plain x-ray chest (PA view)- Hilar shadow, Borders of heart, Counting of ribs, Cardiophrenic and costophrenic angles, Diaphragm, Trachea , Shadow of bones

Th 40. Identify and describe in brief a barium swallow- Mention the procedure, Name and amount of dye used, Preparation of patient for the procedure, Condition when it is required, Contraindications, Comparision with normal X Ray

Th 41. Demonstrate surface marking of lines of pleural reflection, lung borders and fissures, trachea, heart borders, apex beat & surface projection of valves of heart

ABDOMEN AND PELVIS:

AP 1. Describe & demonstrate the Planes (transpyloric, transtubercular, subcostal, lateral vertical, linea alba, linea semilunaris), regions & Quadrants of abdomen

AP 2. Describe & identify the Fascia, nerves & blood vessels of anterior abdominal wall

Describe the formation of rectus sheath and its contents

AP 3. Describe & demonstrate extent, boundaries, contents of Inguinal canal including Hesselbach's triangle. Explain the anatomical basis of inguinal hernia

AP 4. Describe & demonstrate attachments of muscles of anterior abdominal wall

Enumerate common Abdominal incisions

AP 5. Describe & demonstrate coverings, internal structure, side determination, blood supply, nerve supply, lymphatic drainage & descent of testis with its applied anatomy

Describe parts of Epididymis

AP 6. Describe Penis under following headings: (parts, components, blood supply and lymphatic drainage), Explain the anatomical basis of Varicocoele, Explain the anatomical basis of Phimosis & Circumcision

AP 7. Describe Thoracolumbar fascia, Describe & demonstrate Lumbar plexus for its root value, formation & Branches, Mention the major subgroups of back muscles, nerve supply and action

AP 8. Describe & identify boundaries and recesses of Lesser & Greater sac, Name & identify various peritoneal folds & pouches with its explanation, Explain anatomical basis of Ascites & Peritonitis, Explain anatomical basis of Subphrenic abscess

AP 9. Viscera: 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)- Liver&Extra hepatic biliary apparatus,,Spleen,Stomach,Pancreas., Small intestine, Caecum, Appendix, Colon, Rectum, Anal canal & their clinical significance. Kidney,Ureter,Urinary bladder, Urethra, Suprarenals.

AP 10. 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, Mention the clinical importance of Calot's triangle

AP 11. Describe & identify the formation, course relations and tributaries of Portal vein, Inferior vena cava & Renal vein

AP 12. Describe & identify the origin, course, important relations and branches of Abdominal aorta, Coeliac trunk, Superior mesenteric, Inferior mesenteric & Common iliac artery

AP 13. Enumerate the sites of portosystemic anastomosis, Explain the anatomic basis of hematemesis & caput medusae in portal hypertension

AP 14. Describe important nerve plexuses of posterior abdominal wall

AP 15. Describe & demonstrate the attachments, openings, nerve supply & action of the thoracoabdominal diaphragm, Describe the abnormal openings of thoracoabdominal diaphragm and diaphragmatic hernia

AP 16. Describe & identify the muscles of Pelvic diaphragm

AP 17. 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- Prostate,Seminal vesicle,Vasdeferens,Ejaculatoryduct.
Ovary,Uterine tube,Uterus,Vagina.

AP 18. Describe & demonstrate the origin, course, important relations and branches of internal iliac artery, Describe the branches of sacral plexus

AP 19. 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

AP 20. Describe the neurological basis of Automatic bladder, Mention the lobes involved in benign prostatic hypertrophy & prostatic cancer, Mention the structures palpable during vaginal & rectal examination

AP 21. Describe & demonstrate the superficial & deep perineal pouch (boundaries and contents), Describe & identify Perineal body, Describe & demonstrate Perineal membrane in male & female

AP 22. Describe & demonstrate boundaries, content & applied anatomy of Ischiorectal fossa
Explain the anatomical basis of Perineal tear, Episiotomy, Perianal abscess and Anal fissure

AP 23. Describe the curvatures of the vertebral column, Describe & demonstrate the type, articular ends, ligaments and, movements of Intervertebral joints, Sacroiliac joints & Pubic symphysis

AP 24. Describe lumbar puncture (site, direction of the needle, structures pierced during the lumbar puncture), Explain the anatomical basis of Scoliosis, Lordosis, Prolapsed disc, Spondylolisthesis & Spina bifida

AP 25. Describe & identify the cross-section at the level of T8, T10 and L1 (transpyloric plane), Describe & identify the midsagittal section of male and female pelvis

Histology

AP 26. 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

AP 27. 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

AP 28. Describe & identify the microanatomical features of Cardiooesophageal junction, Corpus luteum

Embryology

AP 29. Describe the development of anterior abdominal wall

Describe the development and congenital anomalies of Diaphragm

AP 30. Describe the development and congenital anomalies of: Foregut, Midgut & Hindgut Describe the development of Urinary system

AP 31. Describe the development of male & female reproductive system

Identify & hold the bone in the anatomical position, Describe the salient features, articulations & demonstrate the attachments of muscle groups

Osteology

AP 32. Demonstrate the anatomical position of bony pelvis & show boundaries of pelvic inlet, pelvic cavity, pelvic outlet, Define true pelvis and false pelvis and demonstrate sex determination in male & female bony pelvis

AP 33. Explain and demonstrate clinical importance of bones of abdominopelvic region (sacralization of lumbar vertebra, Lumbarization of 1st sacral vertebra, types of bony pelvis & Coccyx)

Radiology

AP 34. Describe & identify features of plain X ray abdomen
Describe & identify the special radiographs of abdominopelvic region (contrast X ray Barium swallow, Barium meal, Barium enema, Cholecystography, Intravenous pyelography & Hysterosalpingography)

AP 35. Describe role of ERCP, CT abdomen, MRI, Arteriography in radiodiagnosis of abdomen

Surface marking

AP 36. Demonstrate the surface marking of; Regions and planes of abdomen, Superficial inguinal ring, Deep inguinal ring , McBurney's point, Renal Angle & Murphy's point

AP 37. Demonstrate the surface projections of: Stomach, Liver, Fundus of gall bladder, Spleen, Duodenum, Pancreas, Ileocaecal junction, Kidneys & Root of mesentery

HEAD AND NECK:

HN 1. Demonstrate anatomical position of skull, Identify and locate individual skull bones in skull, foetal skull, Describe the features of normafrontalis, verticalis, occipitalis, lateralis and basalis

HN 2. Describe the boundaries of the orbit.
Describe the boundaries and contents of temporal fossa , infratemporal fossa and pterygopalatine fossae in the Norma lateralis, Describe the mandibular fossa in the Norma lateralis

HN 3. Enumerate the structures attached to the styloid and mastoid processes
Describe cranial cavity, its subdivisions, foramina and structures passing through them

HN 4. Enumerate the foramina and the structures passing through it in anterior cranial fossa

Enumerate the foramina in the middle cranial fossa

Identify the foramina and name the structures passing through it in posterior cranial fossa

HN 5. Describe the morphological features in the external and internal surfaces of the mandible.Describe the muscles attached to the mandible.Enumerate the nerves related

to mandible.Enumerate the ligaments attached to mandible.Enumerate the foramina and structures passing through it in mandible. Describe the age related changes of the mandible.

HN 6. Describe features of typical and atypical cervical vertebrae (atlas and axis)

Describe the anatomical position and morphological features of seventh cervical vertebrae.

Enlist the differences between seventh cervical vertebra and other typical cervical vertebra

Describe the attachment of Sibsons Fascia

HN 7. Define ossification and its types, Enumerate various stages of intramembranous ossification, Enumerate the membrane bones present in head and neck

HN 8. Layers of scalp and its clinical importance.- Describe the layers of scalp, its blood supply, its nerve supply and surgical importance, Describe emissary veins with its role in spread of infection from extra cranial route to intracranial venous sinuse

HN 9. Describe & demonstrate muscles of facial expression and their nerve supply Describe the sensory innervation of face.Describe & demonstrate origin/formation, course, branches /tributaries of facial vessels, Describe & demonstrate branches of facial nerve with distribution

HN 10. Describe cervical lymph nodes and lymphatic drainage of head, face and neck

HN 11. Extraoccular muscles and their actions.Identify superficial muscles of face, their nerve supply and actions, Explain the anatomical basis of facial nerve palsy, Explain surgical importance of deep facial vein

HN 12. Describe & demonstrate the parts,borders, surfaces, contents, relations and nerve supply of parotid gland with course of its duct and surgical importance, Explain the anatomical basis of Frey's syndrome.

HN 13. Describe and demonstrate attachments, nerve supply, relations and actions of sternocleidomastoid, Explain anatomical basis of Wry neck

HN 14. Describe the boundaries & contents of posterior triangle, Explain anatomical basis of Erb's and klumpke's palsy

HN 15. Describe and demonstrate attachments of inferior belly of omohyoid, scalenus anterior, scalenusmedius, levator scapulae

HN 16. Describe the cranial fossae & identify related structures, Describe & identify major foramina with structures passing through them

HN 17. Describe & identify dural folds & dural venous sinuses, Describe clinical importance of dural venous sinuses

HN 18. Explain effect of pituitary tumours on visual pathway, Describe & identify extra ocular muscles of eyeball, Describe & demonstrate nerves and vessels in the orbit, Describe anatomical basis of Horner's syndrome

HN 19. Enumerate components of lacrimal apparatus, Explain the anatomical basis of oculomotor, trochlear and abducent nerve palsies along with strabismus

HN 20. Boundaries and contents of Anterior triangle.(carotid,digastric,muscular and submental)

HN 21. Describe & demonstrate extent, boundaries & contents of Temporal & infrtemporal
Fossae, Describe & demonstrate attachments, direction of fibres,nerve supply and actions of muscles of mastication

HN 22. Describe & demonstrate articulating surfaces,type and movements of temporomandibular joint.Explain the clinical significance of pterygoid venous plexus, Describe the features of dislocation of temporomandibular joint.

HN 23. Describe & demonstrate the morphology, relations and nerve supply of submandibular salivary gland & submandibular ganglion, Describe the basis of formation of submandibular stones

HN 24. Describe the parts, extent, attachments, modifications of deep cervical fascia, Describe the fascial spaces of neck

HN 25. Describe & demonstrate location, parts, borders, surfaces,relations & blood supply of thyroid gland, Describe the anatomically relevant clinical features of thyroid swellings

HN 26. Demonstrate & describe the origin, parts, course & branches subclavian artery Describe & demonstrate origin, course, relations, tributaries and termination of internal jugular & brachiocephalic veins

HN 27. Describe and demonstrate extent, drainage & applied anatomy of cervical lymph nodes, Describe and demonstrate the extent, formation, relation & branches of cervical sympathetic chain

HN 28. Describe the course and branches of IX, X, XI, XII nerve in the neck

HN 29. Describe the clinical features of compression of Subclavian artery and lower trunk of brachial plexus by cervical rib

HN 30. Describe the morphology, relations, blood supply and applied anatomy of palatine tonsil, composition of soft palate, Describe the components and functions of Waldeyer's lymphatic ring

HN 31. Describe the boundaries and clinical significance of pyriform fossa, Describe the anatomical basis of tonsillitis, tonsillectomy, adenoids and peri-tonsillar abscess, Describe the clinical significance of Killian's dehiscence

HN 32. Describe & demonstrate features of nasal septum, lateral wall of nose, their blood supply and nerve supply

HN 33. Describe location and functional anatomy of paranasal sinuses, Describe anatomical basis of sinusitis & maxillary sinus tumours

HN 34. Describe the morphology, identify structure of the wall, nerve supply, blood supply and actions of intrinsic and extrinsic muscles of the larynx, Describe the anatomical aspects of laryngitis, Describe anatomical basis of recurrent laryngeal nerve injury

HN 35. Describe and demonstrate the morphology, nerve supply, embryological basis of nerve supply, blood supply, lymphatic drainage and actions of extrinsic and intrinsic muscles of tongue, Explain the anatomical basis of hypoglossal nerve palsy

HN 36. Describe and identify the parts, blood supply and nerve supply of external ear.

HN 37. Describe & demonstrate the boundaries, contents, relations and functional anatomy of middle ear and auditory tube

HN 38. Describe the features of internal ear, Explain anatomical basis of otitis externa and otitis media, Explain anatomical basis of myringotomy

HN 39. Describe and demonstrate parts and layers of eyeball, Describe anatomical aspects of cataract, glaucoma & central retinal artery occlusion, Describe position, nerve supply & action of intra ocular muscles

HN 40. Describe and demonstrate the contents of vertebral canal, Describe & demonstrate the boundaries and contents of Suboccipital triangle

HN 41. Describe the position, direction of fibres, relations, nerve supply, actions of semispinalis capitis and splenius capitis

HN 42. Describe & demonstrate the movements with muscles producing the movements of atlanto occipital joint & atlantoaxial joint

Histology

HN 43. Identify, describe and draw the microanatomy of pituitary gland, thyroid, parathyroid gland, tongue, salivary glands, tonsil, epiglottis, cornea, retina Microanatomy of endocrine organs glands of Head and neck

HN 44. Microanatomy of Mouth, Lip, Tonsil and Salivary gland
Microanatomy of Cornea, Retina and optic nerve

HN 45. Identify, describe and draw microanatomy of olfactory epithelium, eyelid, lip, sclero-corneal junction, optic nerve, cochlea- organ of corti, pineal
Gland

Embryology

HN 46. Describe the development and developmental basis of congenital anomalies of face, palate, tongue, branchial apparatus, pituitary gland, thyroid gland & eye

HN 47. Describe the formation of pharyngeal arches, clefts and pouches, Enumerate the components formed from each of pharyngeal arches, List the derivatives of pharyngeal clefts, pouches

HN 48. Explain the basis of the congenital anomalies, Describe the development of the face

List the derivatives of maxillary , mandibular & fronto nasal processes, Correlate the end derivatives and their nerve supply

HN 49. Describe the formation of the palate from these facial process

Explain the basis of the congenital anomalies, Describe the development of tongue

Correlate the end derivatives and their nerve supply

HN 50. Describe the formation of the thyroid gland, Explain the basis of the congenital anomalies with special reference to the thyroglossal duct

HN 51. Describe the formation of the Pituitary gland Describe the formation of the Eye

Clinical test

HN 52. List the muscles of facial expression, extraocular muscles, muscles of mastication, their nerve supply and action

HN 53. Demonstrate the testing of muscles of facial expression, extraocular muscles, muscles of mastication

HN 54. Discuss the clinical significance of testing of muscles of facial expression, extraocular muscles, muscles of mastication

Surface marking

HN 55. Describe the surface marking of carotid artery, facial artery, superficial temporal artery, internal and external Jugular veins , Subclavian vein
Demonstrate the palpation of carotid artery, facial artery, superficial temporal artery

HN 56. Discuss the clinical significance of knowing the location of internal and external Jugular veins, Enumerate the midline structures of the neck with their vertebral levels Palpate the midline structures with special emphasis on hyoid bone, thyroid cartilage and cricoid cartilage

HN 57. Describe the surface marking of Thyroid gland, Parotid gland and duct, Pterion, accessory nerve, Demonstrate the surface projection of Thyroid gland, Parotid gland and duct, Pterion, accessory nerve

HN 58.Discuss the clinical significance of knowing the surface projection of Thyroid gland, Parotid gland and duct, Pterion, accessory nerve

Radiology

HN 59. Identify the anatomical structures in Plain X-ray skull : AP view and lateral view , Plain X-Ray cervical spine- AP and lateral view, Plain X-Ray of paranasal sinuses

HN 60. Describe the anatomical route used for carotid angiogram and vertebral Angiogram, Identify anatomical structures in carotid angiogram and vertebral angiogram

NERVOUS SYSTEM:

N 1. Describe & identify various layers of meninges with its extent & Modifications Describe circulation of CSF with its applied anatomy

N 2. Identify external features of spinal cord, Describe extent of spinal cord in child & adult with its clinical implication, Draw & label transverse section of spinal cord at mid-cervical & midthoracic Level, Enumerate ascending & descending tracts at mid thoracic level of spinal

Cord, Describe anatomical basis of syringomyelia

N 3. Identify external features of medulla oblongata, Describe transverse section of medulla oblongata at the level of 1) pyramidal decussation, 2) sensory decussation 3) ION

Enumerate cranial nerve nuclei in medulla oblongata with their functional Group, Describe anatomical basis & effects of medial & lateral medullary Syndrome

N 4. Identify external features of pons, Draw & label transverse section of pons at the upper and lower level, Enumerate cranial nerve nuclei in pons with their functional group

N 5. Describe & demonstrate external & internal features of cerebellum

Describe connections of cerebellar cortex and intracerebellar nuclei

Describe anatomical basis of cerebellar dysfunction

N 6. Identify external & internal features of midbrain, Describe internal features of midbrain at the level of superior & inferior colliculus

N 7. Describe anatomical basis & effects of Benedikt's and Weber's syndrome

Enumerate cranial nerve nuclei with its functional component

N 8. Describe & demonstrate surfaces, sulci, gyri, poles, & functional areas of cerebral hemisphere, Describe the white matter of cerebrum

N 9. Enumerate parts & major connections of basal ganglia & limbic lobe

N 10. Describe boundaries, parts, gross relations, major nuclei and connections of dorsal thalamus, hypothalamus, epithalamus, metathalamus and subthalamus

N 11. Describe & identify formation, branches & major areas of distribution of circle of Willis

N 12. Describe & demonstrate parts, boundaries & features of IIIrd, IVth & lateral Ventricle, Describe anatomical basis of congenital hydrocephalus

N 13. Describe & identify the microanatomical features of Spinal cord, Cerebellum & Cerebrum

N 14. Describe the development of neural tube, spinal cord, medulla oblongata, pons, midbrain, cerebral hemisphere & cerebellum

N 15. Describe various types of open neural tube defects with its embryological Basis

GENETICS:

G 1. Describe the structure of chromosomes with classification

Describe technique of karyotyping with its applications

G 2. Describe the Lyon's hypothesis

Describe the various modes of inheritance with examples

G 3. Draw pedigree charts for the various types of inheritance & give examples of diseases of each mode of inheritance, Describe multifactorial inheritance with examples

G 4. Describe the genetic basis & clinical features of Achondroplasia, Cystic Fibrosis, Vitamin D resistant rickets, Haemophilia, Duchene's muscular dystrophy & Sickle cell anaemia

G 5. Describe the structural and numerical chromosomal aberrations, Explain the terms mosaics and chimeras with example

G 6.Describe the genetic basis & clinical features of Prader Willi syndrome,Edward syndrome & Patau syndrome

G 7. Describe genetic basis of variation: polymorphism and mutation

G 8. Describe the principles of genetic counseling

General Histology

H 1. Identify epithelium under the microscope & describe the various types that correlate to its function, Describe the ultrastructure of epithelium

H 2. Describe & identify various types of connective tissue with functional Correlation, Describe the ultrastructure of connective tissue

H 3. Describe & identify various types of muscle under the microscope, Classify muscle and describe the structure-function correlation of the same, Describe the ultrastructure of muscular tissue

H 4. Describe & Identify multipolar & unipolar neuron, ganglia, peripheral nerve, Describe the structure-function correlation of neuron, Describe the ultrastructure of nervous tissue

H 5. Identify elastic & muscular blood vessels, capillaries under the microscope, Describe the various types and structure-function correlation of blood Vessel, Describe the ultrastructure of blood vessels

H 6. Identify exocrine gland under the microscope & distinguish between, serous, mucous and mixed acini

Identify the lymphoid tissue under the microscope & describe microanatomy of lymph node, spleen, thymus, tonsil and correlate the structure with function

H 7. Identify bone under the microscope; classify various types and describe the structure-function correlation of the same

H 8. Identify the skin and its appendages under the microscope and correlate the structure with function

General Embryology

E 1. Describe the stages of human life

E 2. Explain the terms- phylogeny, ontogeny, trimester, viability

E 3. Describe the uterine changes occurring during the menstrual cycle

Describe the synchrony between the ovarian and menstrual cycles

E 4. Describe spermatogenesis and oogenesis along with diagrams

E 5. Describe the stages and consequences of fertilization, Enumerate and describe the anatomical principles underlying contraception

E 6. Describe teratogenic influences; fertility and sterility, surrogate motherhood, social significance of “sex-ratio”.

E 7. Describe cleavage and formation of blastocyst, Describe the development of trophoblast

Describe the process of implantation & common abnormal sites of Implantation

E 8. Describe the formation of extra-embryonic mesoderm and coelom, bilaminar disc and prochordal plate

E 9. Describe in brief abortion; decidual reaction, pregnancy test

E 10. Describe the formation & fate of the primitive streak, Describe formation & fate of notochord, Describe the process of neurulation, Describe the development of somites and intra-embryonic coelom

E 11. Explain embryological basis of congenital malformations, nucleus pulposus, sacrococcygeal teratomas, neural tube defects

E 12. Describe the diagnosis of pregnancy in first trimester and role of teratogens, alpha-fetoprotein

E 13. Describe formation, functions & fate of-chorion: amnion; yolk sac; allantois

& decidua

E 14. Describe formation & structure of umbilical cord, Describe formation of placenta, its physiological functions, foetomaternal circulation & placental barrier

E 15. Describe embryological basis of twinning in monozygotic & dizygotic twins

E 16. Describe role of placental hormones in uterine growth & parturition, Explain embryological basis of estimation of fetal age

E 17. Describe various types of umbilical cord attachments, Describe various methods of prenatal diagnosis

E 18. Describe indications, process and disadvantages of amniocentesis, Describe indications, process and disadvantages of chorion villus

Anatomy Course Outcomes

Learning outcomes (LOs): Having completed a course in human anatomy, the student will be able to:

CO1. Content & Intellectual Breadth:
Demonstrate content knowledge and understanding of terminology, concepts, , relationships and functions between the human tissue structure and function.

CO2. Inquiry:
Utilize a broad foundation of anatomical relationships and physiological principles in analysis, application, and synthesis related to human anatomy.

CO.3 Critical Thinking:
Critically evaluate scientific information to help make decisions with respect to personal health, clinical applications, and research in human anatomy.

CO.4 Life-long Learning:
Demonstrate life-long learning skills, which include deciding what needs to be learned, articulating a learning plan, and implementing this plan.

CO.5 Communication:
Communicate effectively, to a variety of audiences, in various modes.

CO.6 Ethics & Professionalism:
Demonstrate knowledge of ethical and professional behavior related to academic integrity, communication with others, and during individual and cooperative work.

Course Mapping with program Objectives

Program Outcomes

At the end of the M.B.B.S. training program the student should have the requisite knowledge, skills, attitudes, values and responsiveness, so that they may function appropriately and effectively as a Basic Doctor, Physicians of first contact for the community in the primary care setting both in urban as well as rural areas of our country.

To fulfil these objectives the doctor must be able to function appropriately and effectively in the following roles

PO1. Clinician, who understands and provides preventive, promotive, curative, palliative and holistic care with compassion.

PO.2 Leader and member of the health care team and system with capabilities to collect, analyse and synthesize health data.

PO.3 Communicator with patients, families, colleagues and community.

PO.4 Lifelong learner committed to continuous improvement of skills and knowledge.

PO.5 Professional, who is committed to excellence, is ethical, responsive and accountable to patients, community, and profession

Anatomy – Course Goals

The primary goal of Department of Anatomy is to help students acquire a basic working knowledge of human anatomy and their medical applications.

This will include knowledge about:

CG1. the parts and functioning of the major organ systems
CG 2. significant diseases and disorders
CG 3. medical procedures
CG 4. medical terminology
The term "working knowledge" is used here to emphasize the need for students:

CG4a. to organize for themselves a large body of knowledge so that they can "find" the relevant information in their memory
CG4b. to make connections between the different facets of the subject material (between the structure of an organ and its function, between the pathology of a disease and its primary symptoms)
CG4c. to use their knowledge to understand unfamiliar terms, diseases or procedures
CG4d. to be able to explain what they know to someone else (to explain why a high-fat diet can lead to a heart attack, or to explain a patient's condition to a fellow medical professional in a way that will be clearly understood)
This "working knowledge" approach is important for the successful acquisition of additional medical/occupational knowledge; it is essential for using this knowledge in a clinical setting. It is also what students will need to know to be knowledgeable consumers of medical care.

Secondary goals of the class are for students:

CG5. To understand some of the ethical issues involved in health care
CG6. To understand the similarities and differences between human bodies and those of other animals
CG7. To become more confident computer users

Mapping of Course outcome with goals

Course outcomes	Course Goals
CO1. Content & Intellectual Breadth	CG1, CG6.
CO2. Inquiry	CG2, CG3, CG4, CG5.
CO.3 Critical Thinking	CG4a, CG4b, CG4c, CG4d, CG5, CG6
CO.4 Life-long Learning	CG2, CG3, CG4.CG7.
CO.5 Communication	CG4d. CG7.
CO.6 Ethics & Professionalism	CG5, CG6

Mapping Course outcomes with Program Outcomes

		PEOs				
Course outcomes		PO1	PO2	PO3	PO4	PO5
	CO1	x	x			
	CO2		x		x	x
	CO3		x		x	
	CO4				x	x
	CO5	x	x	x	x	
	CO6	x	x	x	x	x

VELAMMAL MEDICAL COLLEGE
HOSPITAL AND RESEARCH INSTITUTE
MADURAI - 625009

Day	8-9 am	9-10 am	10-11 am	11-12 noon	12-1 pm	1-2 pm	2-3 pm	3-4 pm
Mon	Anatomy	Biochemistry	Physiology	Physiology/Histology practical		Lunch break	Anatomy dissection	
	November onwards internal exam							
	Anatomy Biochemistry Physiology		1st week 2nd week 3rd week					
	October onwards integrated teaching every 4th week							
Tue	Biochemistry	Physiology	Anatomy	Physiology/Histology practical			Anatomy dissection	
Wed	Physiology	Anatomy	Biochemistry	Physiology/Biochemistry Practical			Anatomy dissection	
Thu	Anatomy	Biochemistry	Physiology	Physiology/Biochemistry Practical			Anatomy dissection	
Fri	Biochemistry	Comm. Med.	Comm. Med.	Physiology tutorial			Anatomy dissection	
Sat	Anatomy	Physiology	Physiology	Anatomy dissection			Anatomy Tutorial 1st & 5th w Physiology Tutorial 3rd wk / Biochemistry Tutorial 4th wk	

VELAMMAL MEDICAL COLLEGE
HOSPITAL AND RESEARCH INSTITUTE
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DEPARTMENT OF ANATOMY
Individual Time table
First year MBBS 2017-18

Day	8-9 am	9-10 pm	10-11 pm	11-12 noon	12-1 pm	1-2 pm	2-3 pm	3-4 pm
Mon	Anatomy lecture			Histology practical		Lunch break	Anatomy dissection	
	Anatomy internal assessment on every 1st week							
Tue			Anatomy lecture	Histology practical			Anatomy dissection	
Wed		Anatomy lecture					Anatomy dissection	
Thu	Anatomy lecture						Anatomy dissection	
Fri			Anatomy				Anatomy dissection	
Sat	Anatomy lecture			Anatomy dissection			Every 1st & 5th wk tutorial classes	

VELAMMAL MEDICAL COLLEGE
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Department of Anatomy
Lecture plan, Schedule and Methodology
MBBS First year Batch of: 2017-2018

Over view of Lecture and Exam Schedule

- July — Model exam & Study holidays of Previous batch.
- August — University Exam Theory & Practical's
- September — Admission and inauguration
- 01-10-2017 — Lectures started
- 23-06-2018 — Lectures completed
- 29-06-2018 to 11-07-2018 — Model examinations
- 12-07-2018 to 31-07-2018 — Study Holidays
- 01-08-2018 — commencement of University Examinations

Lecture Series code

1 to 19	General Anatomy
20 to 66	Upper limb
67 to 101	Lower limb
102 to 128	Thorax
129 to 177	Abdomen and pelvis
178 to 253	Head and neck
254 to 297	Neuroanatomy

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Lectures Integrated with another department

32 to 39	integration with General Surgery
42, 50, 57	integration with Orthopaedics
75 to 78	integration with General Surgery
94 to 97	integration with Orthopaedics
111 to 120	integration with General Medicine
133	integration with General Surgery
168	integration with OBG
211 to 213	integration with Ophthalmology
234 to 238	integration with ENT
242 to 245	integration with ENT
247	integration with Ophthalmology
261 to 264	integration with General Medicine

mber	me of the Lecture	aching Learning method	sessment method
1.	Introduction to Anatomy and subdivisions	Lecture, Small group	Written/Viva voce
2.	Discuss the History of Anatomy	Lecture, Small group	Written/Viva voce
3.	Explain and demonstrate Anatomical position and planes	Lecture, Small group	Written/Viva voce
4.	Describe the terms used in relation to trunk neck face, Upper limb, Lower limb, related to movements in upper limb,in lower limb, in the neck, in the trunk	Lecture, Small group discussion	Written/Viva voce
5.	Terms used in relation commonly used in embryology and comparative Anatomy, terms used for describing muscles, vessels, bone features, Describe the twelve	Lecture, Small group discussion	Written/Viva voce
6.	Discuss the divisions of skeletal system, Discuss the definition and function of bone, Describe the classification of bones according to shape, developmental classification, regional and structural classification	Lecture, Small group discussion	Written/Viva voce
7.	Explain the gross structure of an adult long bone, parts of a young growing bone, the blood supply and nerve supply of bones, Discuss the development and ossification of bones, Discuss the medicolegal and anthropological aspects of bone	Lecture, Small group discussion	Written/Viva voce
8.	Discuss the general features of cartilage, types of cartilage, comparison between bone and cartilage, difference between the three types	Lecture, Small group discussion	Written/Viva voce
9.	Discuss the Definition and Classification of joints, Discuss fibrous & cartilaginous joints in detail with examples and diagram	Lecture, Small group discussion	Written/Viva voce
10.	Discuss synovial joints in detail with examples and diagram, structure of synovial joint, Describe the nerve supply of joint, discuss the Hilton's law	Lecture, Small group discussion	Written/Viva voce
11.	Describe the types of muscles, structure of striated muscle, Discuss the naming of muscles, nerve supply of skeletal muscles and action of muscles	Lecture, Small group discussion	Written/Viva voce

12.	Describe the concept of anastomoses and collateral circulation with significance of end-arteries, Mention the types of circulation	Lecture, Small group discussion	Written/Viva voce
13.	List the components and functions of the lymphatic system	Lecture, Small group discussion	Written/Viva voce
14.	Explain the layers of epidermis and dermis, appendages of skin,	Lecture, Small group discussion	Written/Viva voce
15.	Fascia, modifications of deep fascia	Lecture, Small group discussion	Written/Viva voce
16.	Introduction to histology – Microscope & processing	Lecture, Small group discussion	Written/Viva voce
17.	Histology practical	Lecture, Small group discussion	Written/Viva voce
18.	Classification of nervous system, Describe the components of central, peripheral & autonomic nervous systems, Describe parts and types of a neuron, Describe structure of a typical spinal nerve	Lecture, Small group discussion, ECE- Visit to blood bank	Written/Viva voce
19.	Class test of general anatomy	Lecture, Small group discussion	Written/Viva voce
20.	Structures met in dissection	DOAP sessions	Practical/OSPE/Viva voce
21.	Introduction to upper limb	Demonstration	Written /Viva voce

22.	Introduction to upper limb dissection	Demonstration sessions	Written /Viva voce
23.	Histology-Classification of tissues & Simple epithelia	Lecture, Small group discussion	Written/Viva voce
24.	Histology practical	Lecture, Small group discussion	Written/Viva voce
25.	Clavicle- its side, important features & keep it in anatomical position, muscle attachment. Mention features, joints formed, peculiarities, muscle attachment of	Lecture, Small group discussion	Written/Viva voce
26.	Scapula - its side, important features & keep it in anatomical position, muscle attachment.	Lecture, Small group discussion	Written/Viva voce
27.	Humerus- its side, important features & keep it in anatomical position, muscle attachment, nerves related	Lecture, Small group discussion	Written/Viva voce
28.	Identify & describe radius	Lecture, Small group discussion	Written/Viva voce
29.	Identify & describe ulna	Lecture, Small group discussion	Written/Viva voce
30.	Identify and name various bones in articulated hand	Lecture, Small group discussion	Written/Viva voce
31.	Pectoral region, the important land marks, the muscles present in this region	Lecture, Small group discussion	Written/Viva voce
32.	Describe the location, extent, deep relations, structure, age changes, blood supply, lymphatic drainage, microanatomy and applied anatomy of breast	Lecture, Small group discussion	Written/Viva voce
33.	Axilla : Boundaries and contents , Describe the anatomical groups of axillary lymph nodes and specify their areas of drainage	Lecture, Small group discussion	Written/Viva voce

34.	Identify, describe and demonstrate the origin, extent, course, parts, relations and branches of axillary artery & tributaries of vein	Lecture, Small group	Written/Viva voce
35.	Describe, identify and demonstrate formation, branches, relations, area of supply of branches, course and relations of terminal branches of brachial plexus	Lecture, Small group discussion	Written/Viva voce
36.	Explain variations in formation of brachial plexus, Explain the anatomical basis of clinical features of Erb's palsy and Klumpke's paralysis	DOAP sessions	Practical/OSPE/Viva voce
37.	Back: Muscles of the back, Describe, identify and demonstrate the position, attachment, nerve supply and actions of trapezius and latissimus dorsi	DOAP sessions	Practical/OSPE/Viva voce
38.	Describe the arterial anastomosis around the scapula and mention the boundaries of triangle of auscultation & Lumbar triangle	DOAP sessions	Practical/OSPE/Viva voce
39.	Scapular region- muscles connecting scapula with vertebral column & humerus, the boundaries and contents of different spaces, rotator cuff muscles, attachment of serratus anterior with its action, Winging of scapula	Lecture, Small group discussion	Written/Viva voce
40.	Histology compound epithelium	Demonstration of Computer assisted learning methods	Practical / Viva voce
41.	Histology practical	Lecture, Small group discussion	Written/Viva voce
42.	Shoulder joint: type, articular surfaces, capsule, synovial membrane, ligaments, relations, movements, muscles involved, blood supply, nerve supply and applied anatomy	Lecture, Small group discussion	Written/Viva voce
43.	Describe and demonstrate muscle groups of upper arm with emphasis on biceps & brachial artery- origin, course, relations, branches	Lecture, Small group discussion	Written/Viva voce
44.	Describe and demonstrate muscle groups of back of arm , radial & axillary nerves	Lecture, Small group discussion	Written/Viva voce

45.	Cubital fossa- boundaries and contents, Explain the basis for measuring blood pressure Describe the anastomosis around the elbow joint	Lecture, Small group discussion	Written/Viva voce
46.	Describe and demonstrate important muscle groups of ventral forearm with attachments, nerve supply and actions front of forearm (flexor retinaculum)	Lecture, Small group discussion	Written/Viva voce
47.	introduction to embryology, cell division	Lecture, Small group discussion	Written/Viva voce
48.	Histology- glands	Lecture ,Small group discussion,	Written/Viva voce
49.	histology practicals	Lecture, Small group discussion	Written/Viva voce
50.	Elbow joint, Radial & Ulnar arteries	DOAP session	Skill assessment/ Viva voce/OSCE
51.	Hand – I (Thenar &Hypothenar muscles, lumbricals &Interossei muscles) & superficial palmar arch	Lecture, Small group discussion	Written/Viva voce
52.	embryology- gametogenesis	Lecture, Small group discussion	Written/Viva voce
53.	Hand – II (spaces & Median nerve)	Lecture, Small group discussion	Written/Viva voce
54.	Identify, describe and demonstrate important muscle groups of dorsal forearm with attachments, nerve supply and actions & dorsum of hand (Extensor retinaculum)	Lecture, Small group discussion	Written/Viva voce
55.	Histology-Connective tissue	Lecture, Small group discussion	Written/Viva voce

56.	Histology practical	Lecture, Small group discussion	Written/Viva voce
57.	Radioulnar, wrist & 1st carpometacarpal joints	Lecture, Small group discussion	Written/Viva voce
58.	Nerves of upper limb	Lecture, Small group	Written/Viva voce
59.	Embryology – menstrual cycle	Lecture, Small group discussion	Written/Viva voce
60.	Venous drainage & lymphatic drainage of Upper limb	Lecture, Small group discussion	Written/Viva voce
61.	Histology-Cartilage	Lecture, Small group discussion	Written/Viva voce
62.	Histology practical	DOAP sessions	Practical/OSPE/ Viva voce
63.	Spotters practice	DOAP sessions	Practical/OSPE/ Viva voce
64.	Radiology	DOAP sessions	Skill assessment/ Viva voce
65.	Surface marking	DOAP sessions	Practical/OSPE/ Viva voce
66.	Class test of upper limb	DOAP sessions, Computed assisted learning Methods	Practical/OSPE/ Viva voce

67.	First Week of Development: Ovulation to Implantation	Lecture, Small group discussion	Written/Viva voce
68.	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	Lecture, Small group discussion	Written/Viva voce
69.	Identify the given bone, its side, important features & keep it in anatomical position Show the hip bone and show the pubic tubercle; anterior superior iliac spine; iliac crest; tubercle of iliac crest	Lecture, Small group discussion	Written/Viva voce
70.	Show the femur bone and show head; neck; greater and leser trochanters; linea aspera; condyles; epicondyles; adductor tubercle; supracondylar ridge	Lecture, Small group discussion	Written/Viva voce
71.	Show the tibia and the following features condyles; tibial tuberosity, condylar articular area; intercondylar eminence and shaft	Lecture, Small group discussion	Written/Viva voce
72.	Second Week of Development: Bilaminar Germ Disc	Lecture, Small group discussion	Written/Viva voce
73.	Show the fibula and the following features shaft, head and malleolus, Describe the importance of ossification of lower end of femur & upper end of tibia	Lecture, Small group discussion	Written/Viva voce
74.	Identify and name various bones in the articulated foot with individual muscle	DOAP sessions	Skill assessment/ Viva voce
75.	Thigh – anterior compartment , femoral triangle (femoral sheath, femoral artery)	DOAP sessions	Skill assessment/ Viva voce/OSCE
76.	Thigh – adductor canal & femoral nerve	DOAP sessions	Practical/OSPE/ Viva voce
77.	Thigh – medial compartment, obturator nerve	Lecture, Small group discussion	Written/Viva voce
78.	Gluteal region – Structures under gluteus maximus	Lecture, Small group discussion	Written/Viva voce

79.	Third Week of Development: Trilaminar Germ Disc	Lecture, Small group discussion	Written/Viva voce
80.	Histology-Bone	Lecture, Small group discussion	Written/Viva voce
81.	Hamstring muscles & sciatic nerve	Lecture, Small group discussion	Written/Viva voce
82.	Popliteal fossa – popliteal vessels	Lecture, Small group discussion	Written/Viva voce
83.	Leg – back & lateral aspect	Lecture, Small group discussion	Written/Viva voce
84.	Leg – front & dorsum of foot	Lecture, Small group discussion	Written/Viva voce
85.	Third to Eighth Week: The Embryonic Period	Lecture, Small group discussion	Written/Viva voce
86.	Histology-Muscle	Lecture, Small group discussion	Written/Viva voce
87.	Histology practical	Lecture, Small group discussion	Written/Viva voce
88.	Sole – I (Muscles &aponeurosis)	Lecture, Small group discussion	Written/Viva voce
89.	Sole – II (neurovascular bundle)	Lecture, Small group discussion	Written/Viva voce

90.	Arches of foot	Lecture, Small group discussion	Written/Viva voce
91.	Venous & lymphatic drainage of lower limb	Lecture, Small group discussion	Written/Viva voce
92.	Third Month to Birth: The Fetus and Placenta	Lecture, Small group discussion	Written/Viva voce
93.	Histology-Blood vessels	Lecture, Small group discussion	Written/Viva voce
94.	Hip joint	Lecture, Small group discussion	Written/Viva voce
95.	Knee joint	Lecture, Small group discussion	Written/Viva voce
96.	Tibiofibular and ankle joints	Lecture, Small group discussion	Written/Viva voce
97.	Subtalar joints, joints of foot	Lecture, Small group discussion	Written/Viva voce
98.	Radiology	Lecture, Small group discussion	Written/Viva voce

99.	surface marking	Lecture, Small group discussion	Written/Viva voce
100.	spotters	Lecture, Small group discussion	OSPE/Viva voce
101.	class test	Lecture, Small group discussion	Written/Viva voce
102.	Identify and describe the salient features of sternum, typical rib, 1st rib and typical thoracic vertebra- Describe the identifying features, Describe the muscle attachments, Related applied anatomy	Lecture, Small group discussion	Written/Viva voce
103.	Identify and describe the salient features of, 1st rib and 2nd,11th & 12th ribs - Describe the identifying features, Describe the muscle attachments, Related applied anatomy	Lecture, Small group discussion	Written/Viva voce
104.	Identify & describe the identifying features of typical thoracic vertebra , 1st 11th and 12th thoracic vertebrae, Describe the muscle attachments & related applied anatomy	Lecture, Small group discussion	Written/Viva voce
105.	Introduction to thorax, thoracic inlet and outlet	Lecture, Small group discussion	Written/Viva voce
106.	Intercostal spaces, Intercostal muscles	Lecture, Small group discussion	Written/Viva voce
107.	Intercostal nerves and vessels	Lecture, Small group discussion	Written/Viva voce
108.	Skeletal System Development	Lecture, Small group discussion	Written/Viva voce
109.	Histology-Nerves & Ganglia	Lecture, Small group discussion	Written/Viva voce

110.	histology practical	Lecture, Small group discussion	Written/Viva voce
111.	Pleura	Lecture, Small group discussion	Written/Viva voce
112.	Lungs	Lecture, Small group discussion	Written/Viva voce
113.	Mediastinum – divisions (Anterior & superior mediastina)	Lecture, Small group discussion	Written/Viva voce
114.	Pericardium and Heart	DOAP sessions	Skill assessment/ Viva voce/OSCE
115.	Muscular System Development	Small group teaching	OSPE/Viva voce
116.	Histology-Skin	Lecture, Small group discussion	Written/Viva voce
117.	Internal features of Heart	Lecture, Small group discussion	Written/Viva voce
118.	Blood supply of heart	Lecture, Small group discussion	Written/Viva voce
119.	Conducting system & Cardiac plexus	Lecture, Small group discussion	Written/Viva voce
120.	Thoracic duct, oesophagus & Trachea	Lecture, Small group discussion	Written/Viva voce

121.	Body Cavities	Lecture, Small group discussion	Written/Viva voce
122.	Histology-Lymph node & spleen	Lecture, Small group discussion	Written/Viva voce
123.	Sympatheric trunk	DOAP sessions	Skill assessment/ Viva voce
124.	Azygos system of veins & Diaphragm	Lecture, Small group discussion	Written/Viva voce
125.	radiology	Lecture, Small group discussion	Written/Viva voce
126.	surface marking	Lecture, Small group discussion	Written/Viva voce
127.	spotters	Lecture, Small group discussion	Written/Viva voce
128.	class test	Lecture, Small group discussion	Written/Viva voce
129.	Demonstrate the anatomical position of bony pelvis & show boundaries of pelvic inlet, pelvic cavity, pelvic outlet, Define true pelvis and false pelvis	Lecture, Small group discussion	Written/Viva voce
130.	Types of bony pelvis , demonstrate sex determination in male & female bony pelvis	Lecture, Small group discussion	Written/Viva voce
131.	Explain and demonstrate clinical importance of bones of abdominopelvic region (sacralization of lumbar vertebra, Lumbarization of 1st sacral vertebra & Coccyx)	Lecture, Small group discussion	Written/Viva voce

132.	Regions of the abdomen & Anterior abdominal wall, Describe the formation of rectus sheath and its contents	Small group teaching	Practical/OSPE/ Viva voce
133.	Describe & demonstrate extent, boundaries, contents of Inguinal canal including Hesselbach's triangle. Explain the anatomical basis of inguinal hernia, spermatic cord	Small group teaching	Practical/OSPE/ Viva voce
134.	Cardiovascular System Development I	Lecture, Small group discussion	Written/Viva voce
135.	Histology-Thymus & tonsil	Lecture, Small group discussion	Written/Viva voce
136.	Male external genitalia	DOAP sessions	Skill assessment/ Viva voce
137.	Peritoneum	DOAP sessions	OSCE
138.	Peritoneum	Lecture	Written/ Viva voce
139.	Stomach & celiac trunk	Lecture	Written/ Viva voce
140.	Cardiovascular System Development II	Lecture	Written/ Viva voce
141.	Histology-Tongue &oesophagus	Lecture	Written/ Viva voce
142.	histology practical	Lecture	Written
143.	Liver	Lecture	Written

144.	Extra hepatic biliary apparatus	Lecture	Written/ Viva voce
145.	Duodenum	Lecture	Written/ Viva voce
146.	Pancreas	Lecture	Written
147.	Caecum & appendix	Lecture	Written
148.	Small intestine & superior mesenteric artery	Practical, Lecture, Small group discussion, DOAP session	Written/Viva voce/ skill assessment
149.	Cardiovascular System Development III	Practical, Lecture, Small group discussion, DOAP session	Written/Viva voce/ skill assessment
150.	Histology-Stomach	Lecture, Small group dicussion, DOAP session	Written/Viva voce/ skill assessment
151.	histology practical	Practical	Written/ Viva voce
152.	Spleen & Portal vein	Lecture	Written
153.	Large intestine & Inferior mesenteric artery	Practical, Lecture	Written/ Viva voce
154.	Kidneys	Practical, Lecture, Small group discussion, DOAP session	Written/ Viva voce/ skill assessment
155.	supra renal gland	Lecture	Written/ Viva voce

156.	Diaphragm	Lecture	Written
157.	Respiratory System Development	Lecture	Written/ Viva voce
158.	Histology-Duodenum, Jejunum & Ileum	Practical,	Written/ Viva voce
159.	Aorta, IVC and posterior abdominal wall	Lecture	Viva voce/ skill assessment
160.	Lumbar & sacral plexus	Lecture	Written/ Viva voce
161.	Perineum	Lecture	Written/ Viva voce
162.	Ischiorectal fossa	Lecture	Written
163.	Digestive System Development I	Lecture	Written/ Viva voce
164.	Histology-Appendix & Large intestine	Lecture	Written
165.	histology practical	Lecture, DOAP session	Written/ Viva voce/ skill
166.	Ureter & Urinary bladder	Lecture	Written
167.	Prostate, seminal vesicle & male urethra	Lecture	Written
168.	Ovary, uterus & adnexa	Practical, Lecture, Small group discussion,	Written/ Viva voce/ skill assessment

169.	Rectum & anal canal	Lecture	Written/ Viva voce
170.	Digestive System Development II	Lecture	Written/ Viva voce
171.	Histology-Liver & Gall bladder	Lecture	Written/ Viva voce
172.	Histology practical	Practical, Lecture, Small group discussion, DOAP session	Written/ Viva voce/ skill assessment
173.	Pelvic diaphragm, fascia & vessels & nerves	Lecture, Small group dicussion	Written/ Viva voce/ skill assessment
174.	Radiology	Lecture	Written
175.	Surface marking	Lecture, Practical	Written/ skill assessment
176.	Spotters	Lecture, Practical	Written
177.	Class test	Lecture, Practical	Written
178.	Introduction to head and neck	Lecture, Practical	Written
179.	Demonstrate anatomical position of skull, Identify and locate individual skull bones in skull, Describe the features of norma frontalis and verticalis	Lecture, Small group discussions	Written assessment and Viva

180.	Describe the features of norma occipitalis and lateralis	Lecture, Small group discussion	Written/Viva voce
181.	Demonstrate anatomical position of skull, Identify and locate individual skull bones in skull, Describe the features of norma frontalis and verticalis	Lecture, Small group discussion	Written/ Viva voce
182.	Describe the features of norma occipitalis and lateralis	Lecture, Small group discussion	Written/ Viva voce
183.	Describe the features of norma basalis	Lecture, Small group discussion	Written/ Viva voce
184.	Describe the features of norma basalis	Lecture, Small group discussion	Written/ Viva voce
185.	Describe the boundaries of the orbit. Describe the boundaries and contents of temporal fossa	Lecture, Small group discussion	Written/ Viva voce
186.	Describe the boundaries and contents of infratemporal fossa and pterygopalatine fossae in the Norma lateralis, Describe the mandibular fossa	Lecture, Small group discussion	Written/ Viva voce
187.	Enumerate the structures attached to the styloid and mastoid processes Describe cranial cavity, its subdivisions, foramina and structures passing through them	Lecture, Small group discussion	Written/ Viva voce
188.	Enumerate the foramina and the structures passing through it in anterior and middle cranial fossa	Lecture, Small group discussion	Written/ Viva voce
189.	Enumerate the foramina and the structures passing through it in posterior cranial fossa	Lecture, Small group discussion	Written/ Viva voce
190.	Describe the morphological features of the mandible, the muscles attachment, the nerves related, ligaments attached, foramina and structures passing, the age related	Lecture, Small group discussion	Written/ Viva voce
191.	Foetal skull	DOAP session	Skill assessment

192.	Describe features of typical and atypical cervical vertebrae (atlas and axis), Describe the anatomical position and morphological features of seventh cervical vertebrae.	Lecture, Small group discussion	Written/ Viva voce
193.	Describe the layers of scalp, its blood supply, nerve supply and surgical importance, Describe emissary veins with its role in spread of infection from extra cranial route to	Lecture, Small group discussion	Written/ Viva voce
194.	Describe & demonstrate muscles of facial expression and their nerve supply. Describe the sensory innervation of face.	DOAP session	Skill Assessment
195.	Describe & demonstrate origin/formation, course, branches /tributaries of facial vessels, Describe & demonstrate branches of facial nerve with distribution	Lecture, Small group discussion	Written/ Viva voce
196.	Describe the parts, extent, attachments, modifications of deep cervical fascia, Describe the fascial spaces of neck	Lecture, Small group discussion	Written/ Viva voce
197.	Digestive System Development III	Lecture, Small group discussion	Written/ Viva voce
198.	Histology-Pancreas	Lecture, Small group discussion	Written/ Viva voce
199.	Histology practical	Lecture, Small group discussion	Written/ Viva voce
200.	Describe the boundaries & contents of posterior triangle, Explain anatomical basis of Erb's and klumpke's palsy	Lecture, Small group discussion	Written/ Viva voce
201.	Spinal accessory nerve	Lecture, Small group discussion	Written/ Viva voce

202.	Sub-occipital triangle	Lecture, Small group discussion	Written/ Viva voce
203.	Boundaries and contents of Anterior triangle.(digastric,muscular and submental)	Lecture, Small group discussion	Written/ Viva voce
204.	Boundaries and contents of carotid triangle	Lecture, Small group discussion	Written/ Viva voce
205.	Describe & identify dural folds & dural venous sinuses, Describe clinical importance of dural venous sinuses	Lecture	Written/ Viva voce
206.	Cavernous sinus	Lecture	Written/ Viva voce
207.	Urogenital System Development I	Lecture	Written/ Viva voce
208.	Histology-Kidney	Lecture	Written/ Viva voce
209.	Histology practical	Lecture	Written/ Viva voce

210.	Pituitary gland	Small group discussion, Lecture	Log book/ skill station/ Viva voce
211.	Bony orbit & extraocular muscles	Small group discussion, DOAP	Log book/ skill station/ Viva voce
212.	Oculomotor, Trochlear &abducent nerves	Lecture, Small group discussion, DOAP session	Written/ Viva voce
213.	Lacrimal apparatus & ophthalmic nerve – ciliary ganglion	Lecture, Small group discussion,	Written/ Viva voce
214.	Urogenital System Development II	Lecture, Small group discussion,	Written/ Viva voce
215.	Histology-Ureter & Urinary bladder	Lecture, Small group discussion,	Written/ Viva voce
216.	Histology practical	Lecture, Small group discussion	Written/ Viva voce
217.	Describe & demonstrate the parts,borders, surfaces, contents, relations and nerve supply of parotid gland with course of its duct and surgical importance, Explain the anatomical basis of Frey's syndrome	Lecture, Small group discussion	Written/ Viva voce

218.	Otic ganglion & submandibular ganglion	Lecture, Small group discussion	Written
219.	Describe & demonstrate the morphology, relations and nerve supply of submandibular salivary gland Describe the basis of formation of submandibular stones	Lecture, Small group discussion	Written/ Viva voce
220.	Describe & demonstrate location, parts, borders, surfaces,relations & blood supply of thyroid gland, Describe the anatomically relevant clinical features of thyroid swellings	Lecture, Small group discussion	Written/ Viva voce
221.	Describe & demonstrate extent, boundaries & contents of Temporal & infratemporal fossae	Lecture, Small group discussion	Written/ Viva voce
222.	Describe & demonstrate attachments, direction of fibres, nerve supply and actions of muscles of mastication	Lecture, Small group discussion	Written/ Viva voce
223.	Temporomandibular joint- articulating surfaces, relations, movement and muscles	Lecture, Small group discussion	Written/ Viva voce
224.	Urogenital System Development III	Lecture, Small group discussion	Written/ Viva voce
225.	Histology-Testis & epididymis	Lecture, Small group discussion	Written/ Viva voce
226.	Histology practical	Lecture, Small group discussion	Written/ Viva voce
227.	Pterygopalatine fossa, Maxillary nerve & pterygopalatine ganglion	Lecture, Small group discussion	Written/ Viva voce
228.	Maxillary artery & Mandibular nerve	Lecture, Small group discussion	Written/ Viva voce

229.	Describe and demonstrate the morphology, nerve supply, embryological basis of nerve supply, blood supply, lymphatic drainage and actions of extrinsic and intrinsic muscles	Lecture, Small group discussion	Written/Viva voce
230.	Hypoglossal & glossopharyngeal nerves	Lecture, Small group discussion	Written/ Viva voce
231.	Head and Neck Development	Lecture, Small group discussion	Written/ Viva voce
232.	Histology-Vas deferens, seminal vesicle & prostate	Lecture, Small group discussion	Written/ Viva voce
233.	Histology practical	Lecture, Small group discussion	Written/ Viva voce
234.	Describe the morphology, relations, blood supply and applied anatomy of soft palate, Describe the components and functions of Waldeyer's lymphatic ring & Cranial accessory nerve	Lecture, Small group discussion	Written/ Viva voce
235.	Nose – Describe & demonstrate features of nasal septum, lateral wall of nose, their blood supply and nerve supply	Lecture, Small group discussion	short notes
236.	Describe location and functional anatomy of paranasal sinuses, Describe anatomical basis of sinusitis & maxillary sinus tumours	Lecture, Small group	short note/ Viva voce
237.	Describe the parts, muscles, nerve supply of Pharynx, Describe the boundaries and clinical significance of pyriform fossa, , Describe the clinical significance of Killian's	Lecture, Small group discussions	Skill Assessment
238.	Describe the morphology, relations, blood supply and applied anatomy of palatine tonsil, Describe the anatomical basis of tonsillitis, tonsillectomy, adenoids and peri-	Lecture, Small group discussions	Skill Assessment
239.	Central Nervous System Development	Lecture, Small group discussions	Written/ Viva voce
240.	Histology-Ovary	Lecture, Small group discussion	Written/Viva voce

241.	Histology practical	Lecture, Small group discussion	Written/ Viva voce
242.	Describe the morphology, identify structure of the wall, nerve supply, blood supply and actions of intrinsic and extrinsic muscles of the larynx	Lecture, Small group discussion	Written/ Viva voce
243.	Describe the cartilages of larynx, Describe the anatomical aspects of laryngitis, Describe anatomical basis of recurrent laryngeal nerve injury	Lecture, small group discussion	Written/ Viva voce
244.	Describe and identify the parts, blood supply and nerve supply of external and internal ear	Lecture, Small group discussion	Written/ Viva voce
245.	Describe and identify the parts, blood supply and nerve supply of middle ear and auditory tube	Lecture, Small group discussion	Written/ Viva voce
246.	Facial nerve- functional components, nuclei, course and relations, branches, applied anatomy	Lecture, Small group discussion	Written/ Viva voce
247.	Describe and demonstrate parts and layers of eyeball, Describe anatomical aspects of cataract, glaucoma & central retinal artery occlusion	Lecture and demonstration	Written/ Viva voce
248.	Integumentary System, Development Of Eye	Lecture, Small group discussion	Written/ Viva voce
249.	Histology-Uterus & uterine tube	Lecture, Small group discussion	Written/ Viva voce
250.	Histology practical	Demonstration in lab and Small group discussion	Written/ Viva voce
251.	Radiology of head and neck	Lecture, Small group discussion	Written/ Viva voce
252.	Surface marking of head and neck	Lecture and Demonstration in dissection	Theory

253.	Spotters of head and neck	Demonstration in dissection	Theory
254.	Parts of Brain, Meninges – modifications & extensions	Lecture and Demonstration in dissection	Written/ Viva voce
255.	Spinal cord – Morphology & blood supply	Lecture, debate	Written/ Viva voce
256.	Transverse section of spinal cord at mid-cervical & midthoracic Level, Enumerate ascending & descending tracts at mid thoracic level of spinal Cord, Describe anatomical basis of syringomyelia	Lecture, Small group discussion	Written/ Viva voce
257.	External features of Brain stem	Lecture and Demonstration in dissection	Written/ Viva voce
258.	Development Of Ear	Lecture, Small group discussion	Skill station
259.	Histology-Breast, placenta &Umbilcal cord	Lecture, Small group discussion	Written/ Viva voce
260.	Histology practical	Lecture, Small group discussion	Written/ Viva voce
261.	Medulla oblongata – Internal features, transverse section at the level of pyramidal decussation, sensory decussation, cranial nerve nuclei in with their functional Group, anatomical basis & effects of medial & lateral medullary Syndrome	Lecture, Small group discussion	Written/ Viva voce
262.	Pons - Internal features, transverse section of pons at the upper and lower level, cranial nerve nuclei in pons with their functional group	Demonstration in dissection	Document in log book

263.	Internal features of midbrain at the level of superior & inferior colliculus	Demonstration in dissection	Document in log book
264.	Describe anatomical basis & effects of Benedikt's and Weber's syndrome	Lecture, Small group discussion	Written/ Viva voce
265.	Enumerate cranial nerve nuclei with its functional component	Lecture, Small group discussion	Written/ Viva voce
266.	Describe & demonstrate the structures in the base of brain	Demonstration in dissection	Written/ Viva voce
267.	Describe the development of neural tube, spinal cord, medulla oblongata, pons, midbrain, cerebral hemisphere & cerebellum	Lecture, Small group discussion	Written/ Viva voce
268.	Describe various types of open neural tube defects with its embryological	Lecture, Small group discussion	Written/ Viva voce
269.	Describe & demonstrate external & internal features of cerebellum and its blood supply	Demonstration in dissection	Written/ Viva voce
270.	Describe connections of cerebellar cortex and intracerebellar nuclei, Cerebellum Peduncles . Describe anatomical basis of cerebellar dysfunction	Lecture and Demonstration in dissection	Written/ Viva voce
271.	Birth Defects and Prenatal Diagnosis	Lecture, Small group discussion	Written/ Viva voce
272.	Histology-Trachea & Lungs	Lecture, Small group discussions	Written/ Viva voce
273.	Histology practical	Lecture, Small group discussion	Written/ Viva voce

274.	Describe & demonstrate surfaces, sulci, gyri, poles, subdivisions & functional areas of cerebral hemisphere	Lecture and demonstration	Written/ Viva voce
275.	Describe the white matter of cerebrum , corpus callosum	Lecture, Small group discussion	Written/ Viva voce
276.	Internal capsule- parts, relations, fibres passing, blood supply applied anatomy	Lecture and Small group discussion	Written/ Viva voce
277.	Enumerate parts & major connections of basal ganglia & limbic lobe	Lecture, Small group discussion	Written/ Viva voce
278.	Genetics I	Lecture, Small group discussion	Written/ Viva voce
279.	Histology-Cerebrum, cerebellum & spinal cord	Lecture, Small group discussion	Written/ Viva voce
280.	Histology practical	Lecture and demonstration	Written/ Viva voce
281.	Describe boundaries, parts, gross relations, major nuclei and connections of dorsal thalamus	Lecture, Small group discussion	Written/ Viva voce

282.	Describe boundaries, parts, gross relations, major nuclei and connections of hypothalamus, epithalamus, metathalamus and subthalamus	Lecture, Small group discussion	Written/ Viva voce
283.	Limbic system	Lecture, Small group discussion	Written/ Viva voce
284.	Describe & demonstrate parts, boundaries & features of IIIrd & lateral ventricle, Describe anatomical basis of congenital hydrocephalus	Lecture, Small group discussion, Demonstration	Written/ Viva voce
285.	Genetics II	Lecture, Small group discussion	Written/ Viva voce
286.	Histology-Pituitary & adrenal	Lecture and demonstration	Skill assessment
289.	histology practical	Lecture, Small group discussion	Written/ Viva voce
290.	Describe & demonstrate boundaries, recesses, roof, floor, communications of IVth Ventricle, Chorid plexus & Circulation of CSF	Lecture, Small group discussion	Written/ Viva voce
291.	Blood supply of brain, Describe & identify formation, branches & major areas of distribution of circle of Willis	Lecture, Small group discussion	Written/ Viva voce
292.	Pathways – Pyramidal, spinothalamic & dorsal column	Lecture, Small group discussion	Written/ Viva voce
293.	Visual, auditory & taste pathway	Lecture and demonstration	Skill assessment
294.	Genetics III	Lecture, Small group discussion	Written/ Viva voce
295.	Histology-Thyroid & parathyroid Cornea & retina	Lecture, Small group discussion	Written/ Viva voce
296.	histology practical	Lecture, Small group discussion	Written/ Viva voce
297.	neuroanatomy revision	Lecture and demonstration	Skill assessment

Anatomy: Detailed Lecture Out Lines

General Anatomy

Sub divisions of anatomy

History of Anatomy

Anatomical position and planes

- The terms used in relation to trunk neck face, Upper limb, Lower limb
- Terms related to movements in upper limb,in lower limb, in the neck, in the trunk
- The terms used in relation commonly used in embryology and comparative Anatomy
- The terms used for describing muscles, vessels & bone features
- The twelve systems of the body
- Divisions of skeletal system

  Bone
- Definition and function
- Classification of bones according to shape, developmental classification, regional and structural classification
- The gross structure of an adult long bone
- The parts of a young growing bone
- The blood supply and nerve supply of bones
- Development and ossification of bones
- Medicolegal and anthropological aspects of bone

Cartilage

- General features, types
- Comparison between bone and cartilage
- Difference between the three types

Joints

- Definition and Classification
- Fibrous joints in detail with examples and diagram
- Cartilaginous joints in detail with examples and diagram
- Synovial joints in detail with examples and diagram
- Structure of synovial joint
- The nerve supply of joint
- The Hilton's law

Muscles

- The types, structure of striated muscle
- The naming of muscles
- Nerve supply of skeletal muscles
- Action of muscles

CARDIOVASCULAR SYSTEM

- Definition of vascular system & lymphatic system
- Difference between blood vascular and lymphatic system
- The types of circulation
- Pulmonary and systemic circulation
- Difference between pulmonary and systemic circulation
- Portal system with examples

- Differences between arteries & veins
- Functional difference between elastic, muscular arteries and arterioles
- The different tissues present in different arteries
- Importance of having different types of arteries in different places
- Anastomoses and collateral circulation
- Significance of end-arteries
- Function of meta-arterioles, precapillary sphincters, arterio-venous anastomoses
- Thrombosis , infarction & aneurysm
- The components and functions of the lymphatic system
- Structure of lymph capillaries & mechanism of lymph circulation

- Lymphoedema and spread of tumors via lymphatics and venous system

Nervous system

- Classification of Nervous system
- General plan of nervous system with components of central, peripheral & autonomic nervous systems
- Components of nervous tissue and their functions
- The types of cells present in nervous tissue
- The functions of different cells in nervous tissue
- Parts of a neuron and classify them based on number of neurites, size & function
- Structure of a typical spinal nerve
- Principles of sensory and motor innervation of muscles
- Concept of loss of innervation of a muscle with its applied anatomy
- Difference between anaesthesia and analgesia
- Definition and classification of various type of synapses
- Definition of ganglia
- Difference between sympathetic and spinal ganglia
- Difference between sympathetic and parasympathetic nervous system
- Reffered pain

UPPER LIMB:

Pectoral region

- Important land marks
- Muscles present in this region
- Attachments of individual muscles
- Attachment & nerve supply of pectoralis major and pectoralis minor
- Important relations to Pectoralis minor
- Clavipectoral fascia & the structures piercing it
- Actions of pectoralis major,minor and serratus anterior

Breast

- Location
- Extent
- Deep relations
- Structure
- Age changes
- Blood supply
- Lymphatic drainage
- Microanatomy
- Applied anatomy
- Anatomical basis of enlarged axillary lymph nodes

Brachial plexus

- Formation
- Branches
- Area of supply of branches
- Course and relations of terminal branches of brachial plexus
- Variations in formation of brachial plexus
- The anatomical basis of clinical features of Erb's palsy and Klumpke's paralysis

Axilla

- Boundaries
- Contents
- The anatomical groups of axillary lymph nodes and their areas of drainage
- The origin, extent, course, parts, relations and branches of axillary artery
- Tributaries of axillary vein
- Muscles of the back
- The position, attachment, nerve supply and actions of trapezius and latissimus dorsi
- The arterial anastomosis around the scapula
- The boundaries of triangle of auscultation & Lumbar triangle

Scapular region

- The muscles connecting scapula with vertebral column
- The muscles connecting scapula with humerus
- The boundaries and contents of different intermuscular spaces
- The deltoid and rotator cuff muscles
- Attachment of serratus anterior with its action, Winging of scapula

Arm

- Muscles of upper arm with emphasis on biceps and triceps brachii
- Origin , course, relations, branches (or tributaries), termination of important nerves and vessels in arm
- The anatomical basis of Venepuncture of cubital veins
- The anatomical basis of Saturday night paralysis

Cubital fossa

- Boundaries and contents
- The basis for measuring blood pressure
- the anastomosis around the elbow joint

Nerves of upper limb

Course and branches and applied anatomy of ulnar, median, radial, musculocutaneous and axillary nerve.

Front of Forearm

- Important muscle groups of ventral forearm with attachments, nerve supply and actions
- Origin , course, relations, branches (or tributaries), termination of important nerves and vessels of forearm
- Flexor and extensor retinaculum, the formation of carpal tunnel, structures passing superficial to flexor retinaculum, structures passing through carpal tunnel
- Anatomical basis of carpal tunnel syndrome
- Compartments deep to extensor retinaculum
- Extensor expansion formation Hand
- Small muscles of hand.

- Movements of thumb and muscles involved, course and branches of important blood vessels and nerves in hand
- Anatomical basis of Claw hand
- Applied anatomy of fascial spaces , fibrous flexor sheaths, ulnar bursa, radial bursa and digital synovial sheaths

Back of forearm

- Important muscle groups of dorsal forearm with attachments, nerve supply and actions
- Origin , course, relations, branches (or tributaries), termination of important nerves and vessels of back of forearm
- The anatomical basis of Wrist drop
- The fasciae over upper limb, the modification of deep fascia in the form of intermuscular septa

Venous drainage of upper limb, superficial veins and deep veins
Lymphatic drainage of upper limbs
Axillary lymph nodes and the areas drained by them
Dermatomes of upper limb

Joints of upper limb

- Shoulder joint- Type
    1. articular surfaces
    2. capsule
    3. synovial membrane
    4. ligaments
    5. relations
    6. movements
    7. muscles involved
    8. blood supply
    9. nerve supply
    10. applied anatomy
- Anatomical basis of Injury to axillary nerve during intramuscular injections
- Elbow joint- Type

1. articular surfaces
2. capsule
3. synovial membrane
4. ligaments
5. relations
6. movements
7. muscles involved
8. blood supply
9. nerve supply
10. applied anatomy

- Radioulnar joint- Type
    1. articular surfaces
    2. capsule
    3. synovial membrane
    4. ligaments
    5. relations
    6. movements
    7. muscles involved
    8. blood supply
    9. nerve supply
    10. applied anatomy
- Wrist joint- Type
    1. articular surfaces
    2. capsule
    3. synovial membrane
    4. ligaments
    5. relations
    6. movements
    7. muscles involved
    8. blood supply
    9. nerve supply
    10. applied anatomy

- Ist carpometacarpal joint- Type
    1. articular surfaces
    2. capsule
    3. synovial membrane
    4. ligaments
    5. relations
    6. movements
    7. muscles involved
    8. blood supply
    9. nerve supply
    10. applied anatomy

- Sternoclavicular joint
- Acromioclavicular joint
- Carpometacarpal joints
- Metacarpophalangeal joint

Radiology of upper limb

The bones and joints of upper limb seen in anteroposterior and lateral view radiographs of shoulder region, arm, elbow, forearm and hand Surface markings of upper limb

- Important bony landmarks of upper limb:
    1. Jugular notch
    2. sternal angle
    3. acromial angle
    4. spine of the scapula
    5. vertebral level of the medial end
    6. Inferior angle of the scapula
- Surface projection of:Cephalic and basilic vein
- Palpation of Brachial artery, Radial artery
- Testing of muscles: Trapezius
    1. pectoralis major
    2. serratus anterior
    3. latissimus dorsi

4. deltoid
5. biceps brachii
6. Brachioradialis

Osteology of upper limb

- Identification of the given bone, its side, important features & anatomical position, pectoral girdle bones,
- Clavicle- side determination, features, joints formed ,peculiarities of clavicle, important muscle attachments
- Scapula- side determination, features, Identify, joints formed, important muscle attachments
- Humerus - side determination, features, Identify, joints formed, important muscle attachments
- Radius - side determination, features, Identify, joints formed, important muscle attachments
- Ulna - side determination, features, Identify, joints formed, important muscle attachments
- Various bones in articulated hand
- Parts of metacarpals and phalanges , peculiarities of pisiform,
- The numbering of metacarpal and phalangeal bones
- Bones forming hand (Carpal, Metacarpal and Phalanges),
- Scaphoid fracture , the anatomical basis of avascular necrosis

LOWER LIMB:

OSTEOLOGY-

Hip bone

- Identification, side determination,
- Important features , muscle attachment & anatomical position
- The pubic tubercle; anterior superior iliac spine; iliac crest; tubercle of iliac crest

Femur

- Identification, side determination
- Important features , muscle attachment & anatomical position
- Head, neck; greater and lesser trochanters;
- Linea aspera; condyles; epicondyles;
- Adductor tubercle; supracondylar ridge

Tibia

- Identification, side determination
- Important features , muscle attachment & anatomical position
- The following features – condyles
  tibial tuberosity
  condylar articular area
  intercondylar eminence
  shaft

Fibula

- Identification, side determination
- Important features , muscle attachment & anatomical position
- The following features shaft, head and malleolus

- The importance of ossification of lower end of femur & upper end of tibia
- Bones in articulated foot with individual muscle attachment, features in different bones
- Calcaneus – medial and lateral processes of tuber calcaneus; sustentaculum tali

- Talus - navicular tuberosity, cuboid groove - for peroneus longus tendon, fifth metatarsal bone styloid process (tuberosity).

Front & Medial side of thigh

- Origin , course, relations, branches (or tributaries), termination of important nerves and vessels of anterior thigh,
- Major muscles with their attachment, nerve supply and actions,
- The superficial fascia & its modification, Fascia lata
- The Holder's line
- Boundaries and contents of femoral triangle
- Femoral sheath
- Anatomical basis of Psoas abscess
- Femoral hernia
- The femoral ring

Nerves of lower limb

- Femoral- course and branches & their applied anatomy
- Obturator- course and branches & their applied anatomy
- Sciatic - course and branches & their applied anatomy
- Tibial - course and branches & their applied anatomy
- Common Peroneal nerves- course and branches & their applied anatomy

Arteries of upper limb

- Course & branches of femoral artery
- Course & branches of profunda femoris artery

Gluteal region

- Muscles of gluteal region, thigh, leg and foot
- Origin , course, relations, branches (or tributaries), termination of important nerves and vessels of gluteal region
- The attachments of gluteus maximus
- The structures present deep to gluteus maximus
- The structures related to piriformis muscle

- Anatomical basis of sciatic nerve injury during gluteal intramuscular injections
- The anatomical basis for the intramuscular injection in Gluteal region
- The anatomical basis of Trendelenburg sign

Back of thigh

- The hamstrings group of muscles with their attachment, nerve supply and actions
- The origin, course, relations, branches (or tributaries), termination of important nerves and vessels on the back of thigh
- Anatomical basis of complications of fracture neck of femur

Anterior compartment of leg

- Major muscles of anterolateral compartment of leg with their attachment, nerve supply and actions,
- The attachment of extensor retinaculum
- Origin , course, relations, branches (or tributaries), termination of important nerves and vessels of anterior compartment of leg,
- Locate the dorsalis pedis artery
- The anatomical basis of foot drop

Adductor canal boundaries and content

Popliteal fossa- Boundaries

Roof

Floor

Contents

Relations

Applied anatomy

Back of leg

- Major muscles of back of leg with their attachment, nerve supply and actions
- The origin, course, relations, branches (or tributaries), termination of important nerves and vessels of back of leg
- The concept of “Peripheral heart”
- The anatomical basis of rupture of calcaneal tendon

Sole

- The muscles present in each layer
- Name the nerves & vessels present in it
- Plantar arch

Arches of the foot

- Factors maintaining importance arches of the foot with its importance
- Skeletal frame work of foot
- The types of arches present
- The factors maintaining longitudinal arches
- The factors maintaining transverse arches
- The anatomical basis of Flat foot & Club foot
- The arch involved in Flat foot condition
- The structures involved for flat foot condition
- Club foot and the types of club foot
- The anatomical basis of Metatarsalgia & Plantar fasciitis

Joints of lower limb

Hip joint

- Type
- Articular surfaces
- Capsule
- Synovial membrane
- Ligaments
- Relation
- Movements
- Muscles involved
- Blood supply
- Nerve supply
- Bursae around the hip joint
- Dislocation of hip joint and surgical hip replacement

Knee joint

- Type

- Articular surfaces
- Capsule
- Synovial membrane
- Ligaments
- Relations
- Movements
- Muscles involved
- Blood and nerve supply
- Bursae around the knee joint
- The anatomical basis of locking and unlocking of the knee joint
- Knee joint injuries with its applied anatomy
- Anatomical basis of Osteoarthritis

Tibiofibular joint

- Type
- Articular surfaces
- Capsule
- Synovial membrane
- Ligaments
- Relations
- Movements
- Muscles involved
- Blood and nerve supply

Ankle joint

- Type
- Articular surfaces
- Capsule
- Synovial membrane
- Ligaments
- Relations
- Movements
- Muscles involved
- Blood and nerve supply

Subtalar and transverse tarsal joints

- Type
- Articular surfaces
- Capsule
- Synovial membrane
- Ligaments
- Relations
- Movements
- Muscles involved
- Blood and nerve supply

Fascia lata, Venous drainage, Lymphatic drainage, Retinacula & Dermatomes of lower limb

- Arrangement of veins in lower limb
- The origin and termination of great saphenous vein
- The tributaries of great saphenous vein
- Explain the role of perforator in venous drainage
- Varicose veins and role of perforator in varicose veins
- Anatomical basis of varicose veins and deep vein thrombosis
- Arrangement of superficial inguinal nodes and the areas drained by the different groups
- The deep lymph nodes in different regions and the area drained by them
- Elephantiasis
- Anatomical basis of enlarged inguinal lymph nodes

Attachment of flexor retinaculum and the structures passing deep to it

Attachments of superior and inferior peroneal retinacula

Attachments of superior and inferior extensor retinaculum

Radiology

- The bones and joints of lower limb seen in anteroposterior and lateral view radiographs of various regions of lower limb
- The anteroposterior view of hip joint & the different parts of the joint in X-rays
- The anteroposterior view of Knee joint & the different parts of the joint in X-rays
- The anteroposterior view of ankle joint & the different parts of the joint in X-rays

Surface marking

- 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

  Mid inguinal point

- Palpation of vessels- femoral

  Popliteal

  dorsalis pedis

  post tibial

- Surface projection of: femoral nerve

  Saphenous opening

  Sciatic

  Tibia

  Common peroneal

  Deep peroneal nerve

  Great and small saphenous veins

Basic concept of development of lower limb

THORAX:

Osteology

- Sternum- the identifying features

  muscle attachments

  joints formed

  related applied anatomy

- typical rib – the identifying features

  muscle attachments

  joints formed

  related applied anatomy

- 1st rib- the identifying features

  muscle attachments

  joints formed

  related applied anatomy

- typical thoracic vertebra- the identifying features

  muscle attachments

  joints formed

- 2nd,11th & 12th ribs- the identifying features

  muscle attachments

  joints formed

  related applied anatomy

- 1st 11th and 12th thoracic vertebrae- the identifying features

  muscle attachments

  joints formed

related applied anatomy

- The boundaries of thoracic inlet, cavity and outlet, the structures passing a
- Related applied anatomy of thoracic inlet, cavity and outlet

Intercostals space

- Intercostals muscles- Extent
  Attachments
  Direction of fibres
  Nerve supply
  Actions
  Related applied anatomy
- Typical intercostal nerve – Origin
  Course
  Relations
  Branches
- Anterior intercostal vessels- Origin
  Course
  Branches / tributaries
- Posterior intercostal vessels- Origin
  Course
  Branches / tributaries
- Internal thoracic vessels- Origin
  Course
  Branches / tributaries
- Atypical intercostal nerve- Origin
  Course
  Relations
  Branches
- Superior intercostal artery- Origin
  Course
  Relations

Branches

- Subcostal artery- Origin
  Course
  Relations
  Branches

JOINTS

- Manubriosternal- Type
  Articular surfaces
  Movements

- Costovertebral- Type
  Articular surfaces
  Movements
- Costotransverse- Type
  Articular surfaces
  Movements
- Xiphisternal - Type
  Articular surfaces
  Movements
- Mechanics and types of respiration
- Costochondral and interchondral joints- the type of joint
  articular surfaces
  possible movements

Mediastinum

- Superior mediastinum - Boundaries and contents
- Anterior mediastinum - Boundaries and contents
- Middle mediastinum - Boundaries and contents
- Posterior mediastinum Boundaries and contents

Pericardium

- Subdivisions
- Sinuses in pericardium
- Blood supply
- Nerve supply

Heart

- External features of each chamber of heart
- Internal features of each chamber of heart
- Coronary arteries- Origin

  Course

  Branches
- Anatomical basis of ischaemic heart disease
- Coronary sinus – Formation

  Course

  Tributaries

  Termination
- The fibrous skeleton of heart- Structures forming, function
- Conducting system of heart -parts, position and arterial supply

Oesophagus – External appearance

Relations

Blood supply

Nerve supply

Lymphatic drainage

Applied anatomy

Thoracic duct – extent

Relations

Tributaries

Applied anatomy

Superior vena cava- Origin

Course

Relations

Tributaries

Termination

Azygos vein- Origin

Course

Relations

Tributaries

Termination

Hemiazygos vein- Origin

Course

Relations

Tributaries

Termination

Accessory hemiazygos vein- Origin

Course

Relations

Tributaries

Termination

Arch of aorta – extent

branches

relations

Descending thoracic aorta- The extent

branches

relations

Thoracic sympathetic chain - location

extent

related applied anatomy

The splanchnic nerves

Lymphatic duct –extent

relations

applied anatomy

Pleura - extent

Parts

Blood supply

Lymphatic drainage

Nerve supply

Pleural recesses

Applied Anatomy

Lung

- Side
- External features
- Relations of structures which form root of lung
- Bronchial tree and their clinical correlate
- Blood supply
- Lymphatic drainage

- Nerve supply of lungs
- Related applied anatomy
- Bronchopulmonary segment- Definition

  Number and names on each side

  Structures supplying it

  Related applied anatomy
- Phrenic nerve - formation

  Distribution

  Related applied anatomy

Trachea- the extent

Length

Relations

Blood supply

Lymphatic drainage

Nerve supply

Related applied anatomy

Histology- Identify, draw and label a slide of trachea and lung

Embryology

- Development of pleura
- Development of lung
- Stages in development of lung
- Development of heart
- Development of chambers, septum & valves of heart
- Fetal circulation and changes occurring at birth
- Embryological basis of: Atrial septal defect, Ventricular septal defect, Fallot's tetralogy & Tracheo-oesophageal fistula

- Developmental basis of congenital anomalies, transposition of great vessels, dextrocardia, patent ductus arteriosus and coarctation of aorta
- Development of aortic arch arteries, SVC, IVC and coronary sinus
- Developmental anomalies

Radiology

- Plain x-ray chest (PA view)- Hilar shadow, Borders of heart, Counting of ribs, Cardiophrenic and costophrenic angles, Diaphragm, Trachea , Shadow of bones
- Barium swallow- the procedure, Name and amount of dye used, Preparation of patient for the procedure, Condition when it is required, Contraindications, Comparision with normal X Ray

Surface marking

- Marking of lines of pleural reflection
- Lung borders and fissures, trachea, heart borders, apex beat
- Surface projection of valves of heart

ABDOMEN AND PELVIS:

Anterior abdominal wall

- Planes (transpyloric, transtubercular, subcostal, lateral vertical, linea alba, linea semilunaris)
- Regions & Quadrants of abdomen
- Anterior abdominal wall – Fascia
  Nerves
  Blood vessels
  Formation of rectus sheath and its contents
  Attachments of muscles of anterior abdominal wall
  Common Abdominal incisions

- Inguinal canal – Extent
  Boundaries
  Contents

Hesselbach's triangle

Anatomical basis of inguinal hernia

Male external genitalia

- Testis - Coverings

  Internal structure

  Side determination

  Blood supply

  Nerve supply

  Lymphatic drainage

  Descent of testis

  Applied anatomy,

- Parts of Epididymis

- Penis under following headings: parts

  Components

  Blood supply

  Lymphatic drainage

  Anatomical basis of Varicocoele,

  Phimosis & Circumcision

Thoracolumbar fascia

Lumbar plexus - root value

formation

Branches

The major subgroups of back muscles, nerve supply and action

Peritoneum

Boundaries and recesses of Lesser & Greater sac

Various peritoneal folds & pouches

Anatomical basis of Ascites & Peritonitis, Subphrenic abscess

Viscera

- Liver- anatomical position, external and internal features, important peritoneal and other relations, blood supply, nerve supply, lymphatic drainage and applied aspects, Liver biopsy
- Extra hepatic biliary apparatus- anatomical position, external and internal features, important peritoneal and other relations, blood supply, nerve supply, lymphatic drainage and applied aspects, Referred pain in cholecystitis, Obstructive jaundice, the clinical importance of Calot's triangle
- Spleen- anatomical position, external and internal features, important peritoneal and other relations, blood supply, nerve supply, lymphatic drainage and applied aspects, The anatomical basis of Splenic notch, Accessory spleens, Kehr's sign
- Stomach- anatomical position, external and internal features, important peritoneal and other relations, blood supply, nerve supply, lymphatic drainage and applied aspects, Lymphatic spread in carcinoma stomach, types of vagotomy
- Pancreas- anatomical position, external and internal features, important peritoneal and other relations, blood supply, nerve supply, lymphatic drainage and applied aspects
- Small intestine- anatomical position, external and internal features, important peritoneal and other relations, blood supply, nerve supply, lymphatic drainage and applied aspects
- Caecum- anatomical position, external and internal features, important peritoneal and other relations, blood supply, nerve supply, lymphatic drainage and applied aspects
- Appendix- anatomical position, external and internal features, important peritoneal and other relations, blood supply, nerve supply, lymphatic drainage and applied aspects
- Colon- anatomical position, external and internal features, important peritoneal and other relations, blood supply, nerve supply, lymphatic drainage and applied aspects
- Rectum- anatomical position, external and internal features, important peritoneal and other relations, blood supply, nerve supply, lymphatic drainage and applied aspects
- Anal canal- anatomical position, external and internal features, important peritoneal and other relations, blood supply, nerve supply, lymphatic drainage and applied aspects

- Kidney- anatomical position, external and internal features, important peritoneal and other relations, blood supply, nerve supply, lymphatic drainage and applied aspects, Radiating pain of kidney to groin
- Ureter- anatomical position, external and internal features, important peritoneal and other relations, blood supply, nerve supply, lymphatic drainage and applied aspects
- Urinary bladder- anatomical position, external and internal features, important peritoneal and other relations, blood supply, nerve supply, lymphatic drainage and applied aspects
- Urethra- anatomical position, external and internal features, important peritoneal and other relations, blood supply, nerve supply, lymphatic drainage and applied aspects
- Suprarenals- anatomical position, external and internal features, important peritoneal and other relations, blood supply, nerve supply, lymphatic drainage and applied aspects

PORTAL VEIN

- The formation, course relations and tributaries of Portal vein, Inferior vena cava & Renal vein
- The sites of portosystemic anastomosis, the anatomic basis of hematemesis & caput medusae in portal hypertension

The origin, course, important relations and branches of Abdominal aorta, Coeliac trunk, Superior mesenteric, Inferior mesenteric & Common iliac artery

Important nerve plexuses of posterior abdominal wall

Thoracoabdominal diaphragm - attachments
Openings
Nerve supply
Action
Abnormal openings
Diaphragmatic hernia

The muscles of Pelvic diaphragm

Male & female pelvic viscera

- Prostate- position, features, important peritoneal and other relations, blood supply, nerve supply, lymphatic drainage and clinical aspects
- Seminal vesicle- position, features, important peritoneal and other relations, blood supply, nerve supply, lymphatic drainage and clinical aspects
- Vas deferens- position, features, important peritoneal and other relations, blood supply, nerve supply, lymphatic drainage and clinical aspects
- Ejaculatory duct - position, features, important peritoneal and other relations, blood supply, nerve supply, lymphatic drainage and clinical aspects
- Ovary- position, features, important peritoneal and other relations, blood supply, nerve supply, lymphatic drainage and clinical aspects
- Uterine tube -position, features, important peritoneal and other relations, blood supply, nerve supply, lymphatic drainage and clinical aspects
- Uterus- position, features, important peritoneal and other relations, blood supply, nerve supply, lymphatic drainage and clinical aspects
- Vagina- position, features, important peritoneal and other relations, blood supply, nerve supply, lymphatic drainage and clinical aspects

- The origin, course, important relations and branches of internal iliac artery, the branches of sacral plexus
- Anatomical basis of suprapubic cystostomy
- Urinary obstruction in benign prostatic hypertrophy
- Retroverted uterus
- Prolapsed uterus
- Internal and external haemorrhoids
- Anal fistula
- Vasectomy
- Tubal pregnancy & tubal ligation

- The neurological basis of automatic bladder

- The lobes involved in benign prostatic hypertrophy

- Prostatic cancer

- The structures palpable during vaginal & rectal examination

Perineum

- The superficial - boundaries and contents
- deep perineal pouch - boundaries and contents
- Perineal body
- Perineal membrane in male & female
- Ischiorectal fossa - Boundaries , content & applied anatomy
- the anatomical basis of Perineal tear
- Episiotomy
- Perianal abscess
- Anal fissure

- Curvatures of the vertebral column
- The type, articular ends, ligaments and, movements of Intervertebral joints, Sacroiliac joints & Pubic symphysis
- Lumbar puncture (site, direction of the needle, structures pierced during the lumbar puncture)
- The anatomical basis of Scoliosis, Lordosis, Prolapsed disc, Spondylolisthesis & Spina bifida
- The cross-section at the level of T8, T10 and L1 (transpyloric plane)
- The midsagittal section of male and female pelvis

Histology

- 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
- 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
- The microanatomical features of Cardiooesophageal junction, Corpus luteum

Embryology

- Development of anterior abdominal wall
- Development and congenital anomalies of Diaphragm
- Development and congenital anomalies of: Foregut, Midgut & Hindgut
- Development of Urinary system
- Development of male & female reproductive system

Osteology

- The anatomical position of bony pelvis
- Boundaries of pelvic inlet, pelvic cavity, pelvic outlet
- True pelvis and false pelvis
- Sex determination in male & female bony pelvis
- Clinical importance of bones of abdominopelvic region
- Sacralization of lumbar vertebra
- Lumbarization of 1st sacral vertebra
- Types of bony pelvis & Coccyx

Radiology

- Features of plain X ray abdomen
- The special radiographs of abdominopelvic region (contrast X ray Barium swallow, Barium meal, Barium enema, Cholecystography, Intravenous pyelography & Hysterosalpingography)
- Role of ERCP, CT abdomen, MRI, Arteriography in radiodiagnosis of abdomen

Surface marking

- The surface marking of; Regions and planes of abdomen, Superficial inguinal ring, Deep inguinal ring , McBurney's point, Renal Angle & Murphy's point

- The surface projections of: Stomach, Liver, Fundus of gall bladder, Spleen, Duodenum, Pancreas, Ileocaecal junction, Kidneys & Root of mesentery

HEAD AND NECK:

Osteology

- Anatomical position of skull
- Individual skull bones in skull
- Foetal skull
- Features of norma frontalis, verticalis, occipitalis, lateralis and basalis
- The boundaries of the orbit
- The boundaries and contents of temporal fossa , infratemporal fossa and pterygopalatine fossae in the Norma lateralis
- The mandibular fossa in the Norma lateralis
- The structures attached to the styloid and mastoid processes
- Cranial cavity, its subdivisions, foramina and structures passing through them
- The foramina and the structures passing through it in anterior cranial fossa, middle cranial fossa, posterior cranial fossa
- The morphological features of the mandible, the muscles attachment, the nerves related,ligaments attached, foramina and structures passing, the age related changes
- Features of typical and atypical cervical vertebrae (atlas and axis)

- Describe the anatomical position and morphological features of seventh cervical vertebrae
- The differences between seventh cervical vertebra and other typical cervical vertebra
- The attachment of Sibsons Fascia
- Ossification and its types, various stages of intramembranous ossification, the membrane bones present in head and neck

Scalp

- Layers of scalp
- Its blood supply, its nerve supply and surgical importance
- Emissary veins with its role in spread of infection from extra cranial route to intracranial venous sinuses

Face

- Muscles of facial expression and their nerve supply
- The sensory innervation of face.
- Origin /formation, course, branches /tributaries of facial vessels
- Branches of facial nerve with distribution
- Superficial muscles of face, their nerve supply and actions
- The anatomical basis of facial nerve palsy
- Surgical importance of deep facial vein

Cervical lymph nodes and lymphatic drainage of head, face and neck

Extraoccular muscles and their actions

Parotid gland

- The parts, borders, surfaces, contents, relations and nerve supply
- Course of parotid duct
- Surgical importance
- The anatomical basis of Frey's syndrome.

Attachments , nerve supply, relations and actions of sternocleidomastoid

Anatomical basis of Wry neck

The boundaries & contents of posterior triangle

Anatomical basis of Erb's and klumpke's palsy

Attachments of inferior belly of omohyoid, scalenus anterior, scalenusmedius, levator scapulae

Dural folds & dural venous sinuses

Clinical importance of dural venous sinuses

Orbit

- Effect of pituitary tumours on visual pathway,
- Extra ocular muscles of eyeball,
- Nerves and vessels in the orbit,
- Anatomical basis of Horner's syndrome

Components of lacrimal apparatus

The anatomical basis of oculomotor, trochlear and abducent nerve palsies along with strabismus

Boundaries and contents of Anterior triangle.(carotid,digastric,muscular and submental)

Temporal region

- Extent, boundaries & contents of Temporal & infrtemporal Fossae,
- Attachments, direction of fibres,nerve supply and actions of muscles of mastication
- Articulating surfaces,type and movements of temporomandibular joint
- The clinical significance of pterygoid venous plexus
- The features of dislocation of temporomandibular joint.

The morphology, relations and nerve supply of submandibular salivary gland & submandibular ganglion,

The basis of formation of submandibular stones

The parts, extent, attachments, modifications of deep cervical fascia,

The fascial spaces of neck

Location, parts, borders, surfaces,relations & blood supply of thyroid gland,

The anatomically relevant clinical features of thyroid swellings

The origin, parts, course & branches subclavian artery

Origin, course, relations, tributaries and termination of internal jugular & brachiocephalic veins

Extent, drainage & applied anatomy of cervical lymph nodes,

The extent, formation, relation & branches of cervical sympathetic chain

The course and branches of IX, X, XI, XII nerve in the neck

The clinical features of compression of Subclavian artery and lower trunk of brachial plexus by cervical rib

Pharynx

- The morphology, relations, blood supply and applied anatomy of palatine tonsil, composition of soft palate,
- The components and functions of Waldeyer's lymphatic ring
- The boundaries and clinical significance of pyriform fossa,
- The anatomical basis of tonsillitis, tonsillectomy, adenoids and peri-tonsillar abscess,
- The clinical significance of Killian's dehiscence

Nose and paranasal sinuses

- Features of nasal septum, lateral wall of nose, their blood supply and nerve supply
- Location and functional anatomy of paranasal sinuses,
- anatomical basis of sinusitis & maxillary sinus tumours

Larynx

- Cartilages of larynx

- The morphology, structure of the wall, nerve supply, blood supply and actions of intrinsic and extrinsic muscles of the larynx,
- The anatomical aspects of laryngitis, recurrent laryngeal nerve injury

Tongue

- The morphology, nerve supply, embryological basis of nerve supply, blood supply, lymphatic drainage and actions of extrinsic and intrinsic muscles of tongue,
- The anatomical basis of hypoglossal nerve palsy

Anatomy of ear

- The parts, blood supply and nerve supply of external ear.
- The boundaries, contents, relations and functional anatomy of middle ear and auditory tube
- The features of internal ear,
- Anatomical basis of otitis externa and otitis media, myringotomy

Eyeball

- Parts and layers of eyeball,
- Anatomical aspects of cataract, glaucoma & central retinal artery occlusion,
- Position , nerve supply & action of intra ocular muscles

- The contents of vertebral canal,
- The boundaries and contents of Suboccipital triangle
- The position, direction of fibres, relations, nerve supply, actions of semispinalis capitis and splenius capitis

The movements with muscles producing the movements of atlanto occipital joint & atlantoaxial joint

Histology

- Microanatomy of pituitary gland, thyroid, parathyroid gland, tongue, salivary glands, tonsil, epiglottis, cornea, retina
- Microanatomy of endocrine organs glands of Head and neck

- Microanatomy of Mouth, Lip, Tonsil and Salivary gland
- Microanatomy of Cornea, Retina and optic nerve
- Microanatomy of olfactory epithelium, eyelid, lip, sclero-corneal junction, optic nerve, cochlea- organ of corti, pineal gland

Embryology

- Development and developmental basis of congenital anomalies of face, palate, tongue, branchial apparatus, pituitary gland, thyroid gland & eye
- The formation of pharyngeal arches, clefts and pouches
- The components formed from each of pharyngeal arches
- The derivatives of pharyngeal clefts, pouches
- The basis of the congenital anomalies, the development of the face
- The derivatives of maxillary , mandibular & fronto nasal processes
- Correlate the end derivatives and their nerve supply
- The formation of the palate from these facial process
- The basis of the congenital anomalies,
- The development of tongue
- Correlate the end derivatives and their nerve supply
- The formation of the thyroid gland
- The basis of the congenital anomalies with special reference to the thyroglossal duct

- The formation of the Pituitary gland
- The formation of the Eye

Clinical test

- The muscles of facial expression, extraocular muscles, muscles of mastication, their nerve supply and action
- The testing of muscles of facial expression, extraocular muscles, muscles of mastication
- The clinical significance of testing of muscles of facial expression, extraocular muscles, muscles of mastication

Surface marking

- The surface marking of carotid artery, facial artery, superficial temporal artery, internal and external Jugular veins , Subclavian vein
- The palpation of carotid artery, facial artery, superficial temporal artery
- The clinical significance of knowing the location of internal and external Jugular veins, the midline structures of the neck with their vertebral levels
- Palpate the midline structures with special emphasis on hyoid bone, thyroid cartilage and cricoid cartilage
- The surface marking of Thyroid gland, Parotid gland and duct, Pterion, accessory nerve,

Radiology

- The anatomical structures in Plain X-ray skull : AP view and lateral view , Plain X-Ray cervical spine- AP and lateral view, Plain X-Ray of paranasal sinuses
- The anatomical route used for carotid angiogram and vertebral angiogram

NERVOUS SYSTEM:

Various layers of meninges with its extent & Modifications
Circulation of CSF with its applied anatomy

SPINAL CORD

- External features of spinal cord
- Extent of spinal cord in child & adult with its clinical implication
- Transverse section of spinal cord at mid-cervical & midthoracic Level,
- Ascending & descending tracts at mid thoracic level of spinal cord
- Anatomical basis of syringomyelia

BRAINSTEM AND CEREBELLUM

- External features of medulla oblongata,
- Transverse section of medulla oblongata at the level of 1) pyramidal decussation, 2) sensory decussation 3) ION
- Cranial nerve nuclei in medulla oblongata with their functional Group,
- Anatomical basis & effects of medial & lateral medullary Syndrome
- External features of pons
- Transverse section of pons at the upper and lower level
- Cranial nerve nuclei in pons with their functional group
- External & internal features of cerebellum
- Connections of cerebellar cortex and intracerebellar nuclei
- Anatomical basis of cerebellar dysfunction
- External & internal features of midbrain
- Internal features of midbrain at the level of superior & inferior colliculus
- Anatomical basis & effects of Benedikt's and Weber's syndrome
- Cranial nerve nuclei with its functional component

Surfaces, sulci, gyri, poles, & functional areas of cerebral hemisphere
The white matter of cerebrum

Parts & major connections of basal ganglia & limbic lobe

Boundaries, parts, gross relations, major nuclei and connections of dorsal thalamus, hypothalamus, epithalamus, metathalamus and subthalamus

Formation, branches & major areas of distribution of circle of Willis

Parts, boundaries & features of IIIrd, IVth & lateral ventricle
Anatomical basis of congenital hydrocephalus

The microanatomical features of Spinal cord, Cerebellum & Cerebrum

The development of neural tube, spinal cord, medulla oblongata, pons, midbrain, cerebral hemisphere & cerebellum

Various types of open neural tube defects with its embryological basis

GENETICS:

- The structure of chromosomes with classification
- Technique of karyotyping with its applications
- The Lyon's hypothesis
- The various modes of inheritance with examples
- Pedigree charts for the various types of inheritance & examples of diseases of each mode of inheritance
- Multifactorial inheritance with examples
- The genetic basis & clinical features of Achondroplasia, Cystic Fibrosis, Vitamin D resistant rickets, Haemophilia, Duchene's muscular dystrophy & Sickle cell anaemia
- The structural and numerical chromosomal aberrations
- The terms mosaics and chimeras with example
- The genetic basis & clinical features of Prader Willi syndrome,Edward syndrome & Patau syndrome
- Genetic basis of variation: polymorphism and mutation
- The principles of genetic counseling

General Histology

- Epithelium under the microscope & the various types that correlate its function,
- Various types of connective tissue with functional orrelation
- Various types of muscle under the microscope,
- Muscle and describe the structure-function correlation of the same,
- The ultrastructure of muscular tissue
- Multipolar & unipolar neuron, ganglia, peripheral nerve,
- The structure-function correlation of neuron,
- The ultrastructure of nervous tissue
- Elastic & muscular blood vessels, capillaries under the microscope,
- The various types and structure-function correlation of blood vessel,
- The ultrastructure of blood vessels

- Exocrine gland under the microscope & distinguish between, serous, mucous and mixed acini
- The lymphoid tissue under the microscope & microanatomy of lymph node, spleen, thymus, tonsil and correlate the structure with function
- Bone , classify various types and describe the structure-function correlation of the same
- The skin and its appendages under the microscope and correlate the structure with function

General Embryology

- The stages of human life
- The terms- phylogeny, ontogeny, trimester, viability
- The uterine changes occurring during the menstrual cycle
- The synchrony between the ovarian and menstrual cycles
- Spermatogenesis and oogenesis along with diagrams
- The stages and consequences of fertilization
- And describe the anatomical principles underlying contraception
- Teratogenic influences; fertility and sterility, surrogate motherhood, social significance of “sex-ratio”.
- Cleavage and formation of blastocyst
- The development of trophoblast
- The process of implantation & common abnormal sites of implantation
- The formation of extra-embryonic mesoderm and coelom, bilaminar disc and prochordal plate
- In brief abortion; decidual reaction, pregnancy test
- The formation & fate of the primitive streak
- Formation & fate of notochord
- The process of neurulation
- The development of somites and intra-embryonic coelom
- Embryological basis of congenital malformations, nucleus pulposus, sacrococcygeal teratomas, neural tube defects
- The diagnosis of pregnancy in first trimester and role of teratogens, alpha-fetoprotein

- Formation, functions & fate of-chorion: amnion; yolk sac; allantois & decidua
- Formation & structure of umbilical cord, describe formation of placenta, its physiological functions, foetomaternal circulation & placental barrier
- Embryological basis of twinning in monozygotic & dizygotic twins
- Role of placental hormones in uterine growth & parturition,
- Embryological basis of estimation of fetal age
- Various types of umbilical cord attachments, describe various methods of prenatal diagnosis
- Indications, process and disadvantages of amniocentesis, describe indications, process and disadvantages of chorion villus biopsy

University Questions

August 2008

[KT 500] **Sub. Code : 4051**

FIRST M.B.B.S. DEGREE EXAMINATION.

Revised (Non-Semester) Regulations
Paper I – **ANATOMY – I**
Q. P. Code : 524051

Time : Three hours Maximum: 100 Marks

Answer **ALL** questions.
Draw Suitable diagrams wherever necessary

I. Essay questions : **(2 x 15 = 30)**

1. Describe the formation, course, relations, branches of distribution & effects of injury of median nerve.

2. Describe the pancreas under the following headings parts, relations, blood supply, development and histology

II. Write Short notes on : **(10 x 5 = 50)**

1. Lower end of humerus
2. Trisomy 21
3. Cutaneous innervation of hand
4. Abductors of hip joint & their role in gait
5. Saphenous vein
6. Ligaments of liver
7. Structure of kidney
8. Inguinal Ligament
9. Rectus sheath
10. Coeliac ganglion

III. Short Answer Questions : **(10 x 2 = 20)**

1. Name of Muscles of II layer of sole of the foot.
2. Name the Bursae around the patella.
3. Name the Abductors of the wrist joint.
4. Indicate the terminal branches of posterior cord of Brachial plexus
5. Indicate the Tributaries of left renal vein.
6. Name the two most common positions of appendix.
7. Indicate the structure of the free border of lesser omentum.
8. Name the Arteries of the spermatic cord.
9. Name the nerves closely related to humerus
10. Name three structures at the trans pyloric plane.

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MADURAI - 625009

February 2009

[KU 500] **Sub. Code : 4051**

FIRST M.B.B.S. DEGREE EXAMINATION.
Revised (Non-Semester) Regulations
Paper I – ANATOMY – I
Q. P. Code : *524051*

Time : Three hours **Maximum: 100 Marks**

Answer ALL questions.
Draw Suitable diagrams wherever necessary

I. Essay Questions : **(2 x 15 = 30)**

1. Describe the mammary gland and give its blood supply lymphatic drainage and applied anatomy.

2. Describe the relations, Blood supply and microscopic structure of duodenum.

II. Write Short notes on : **(10 x 5 = 50)**

1. Femoral sheath.
2. Subtalar joints.
3. Histology of spleen.
4. Development of urinary bladder.
5. Superficial perineal pouch.
6. Arteria profunda brachii.
7. Turners's syndrome.
8. Lesser sac.
9. Popliteus muscle.
10. Dorsalis pedis artery.

III. Short Answer Questions : **(10 x 2 = 20)**

1. Name the structures piercing clavi pectoral fascia.
2. Give the action of lumbrical muscle.
3. Name the structures deep to flexor retinaculum of hand.
4. Give the boundaries of epiploic foramen.
5. Give the significance of Douglas pouch.
6. What is annular pancreas.
7. Name the branches of external iliac artery.
8. Name the structures piercing oblique popliteal ligament.
9. Name the arteries forming trochanteric anastamosis.
10. Name the contents of subsartorial canal.

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MADURAI - 625009

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August 2009

[KV 500] **Sub. Code : 4051**

FIRST M.B.B.S. DEGREE EXAMINATION.
Revised (Non-Semester) Regulations
Paper I – ANATOMY – I
Q. P. Code : 524051

Time : Three hours **Maximum: 100 Marks**

Answer ALL questions.
Draw Suitable diagrams wherever necessary

I. Essay Questions : **(2 x 15 = 30)**

1. Describe the uterus under the following headings:
   a) Position & parts **b)** Relations **c)** Blood supply
   d) Ligaments & supports. **e)** Development **f)** Histology
   g) Applied anatomy.

2. Describe the hip joint under the following headings:
   a) Articular surfaces **b)** Ligaments **c)** Relations
   d) Muscles and movements **e)** Applied Anatomy.

II. Write Short notes on : **(10 x 5 = 50)**

1. Great saphenous vein.
2. Blood supply of long bone.
3. Karyotyping.
4. Lesser sac.
5. Thoracolumbar fascia.
6. Histology of duodenum.
7. Axillary lymph nodes.
8. Popliteal fossa.
9. Neural tube.
10. Coeliac trunk.

III. Short Answer Questions : **(10 x 2 = 20)**

1. Enumerate the contents of spermatic cord.
2. Enumerate the bare areas of liver.
3. Name four tributaries of inferior vena cava.
4. Nerve supply of the lumbricals of the hand.
5. Name the muscles supplied by the obturator nerve.

6. Erb's point.
7. Name the contents of superficial perineal pouch.
8. Name the bones forming medial longitudinal arch of foot.
9. Enumerate four structures related to the anterior surface of left kidney.
10. Name four derivatives of ectoderm.

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MADURAI - 625009

February 2010

[KW 500] **Sub. Code : 4051**

FIRST M.B.B.S. DEGREE EXAMINATION.
Revised (Non-Semester) Regulations
Paper I – ANATOMY – I
Q. P. Code : 524051

Time : Three hours **Maximum: 100 Marks**

Answer ALL questions.
Draw Suitable diagrams wherever necessary

I. Essay Questions : **(2 x 15 = 30)**

1. Describe the urinary bladder under the following headings surfaces and borders, relations, blood supply, histology and applied aspects.

2. Describe the shoulder joint under articular surfaces, capsule, ligaments, movements and muscles causing them, applied aspects.

II. Write Short notes on : **(10 x 5 = 50)**

1. Carpal tunnel.
2. Hepato renal pouch.
3. Microscopic structure of testis.
4. Supports of uterus.
5. Medial longitudinal arch of foot.
6. Blood supply of long bone.
7. Obturator nerve.
8. Epiploic foramen.
9. Klinefecter's Syndrome.
10. Menisci of knee joint.

III. Short Answer Questions : **(10 x 2 = 20)**

1. Name any two tarsal bones of the foot.
2. Name the muscles causing abduction at wrist joint.
3. Name the terminal branches of sciatic nerve.
4. Name the arteries supplying transverse colon.
5. Name the branches arising from posterior cord of the brachial plexus.
6. Name the muscles present within the deep perineal pounch.
7. Name the parts of the uterine tube.

8. Name the coverings of kidney.
9. Name the two most common positions of appendix.
10. Name the structures piercing the clavipectoral facsia.

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August 2010

[KX 500] Sub. Code : 4051

FIRST M.B.B.S. DEGREE EXAMINATION.

Revised (Non-Semester) Regulations

Paper I – ANATOMY – I

Q. P. Code : 524051

Time : Three hours Maximum: 100 Marks

Answer **ALL** questions.

Draw Suitable diagrams wherever necessary

I. Essay Questions : (2 x 15 = 30)

1. Describe the stomach under the following headings: parts, relations, blood supply, lymphatic drainage and applied aspects.
2. Describe the formation, course, relations, branches and distribution of radial nerve and effects of injury of radial nerve.

II. Write Short notes on : (10 x 5 = 50)

1. Cubital fossa.
2. Cartilagenous joints.
3. Microscopic structure of suprarenal gland.
4. Inguinal canal.
5. Ligaments around the hip joint.
6. Turner's syndrome.
7. Microscopic structure of hyaline cartilage.
8. Omental bursa.
9. Derivatives of second pharyngeal arch.
10. Peroneal retinacula.

III. Short Answer Questions : (10 x 2 = 20)

1. Name the arteries supplying transverse colon.
2. Name the muscles forming rotator cuff around shoulder joint.
3. Name the Hamstring muscles.
4. Name the muscles within the rectus sheath.
5. Name the branches arising from lateral cord of brachial plexus.
6. Name the ligaments present within the knee joint.
7. Popliteus muscle.

8. Name the coverings of testis.
9. Name the muscles of I layer of sole of the foot.
10. Name the muscles causing lateral rotation at hip joint.

February 2011

[KY 500] Sub. Code : 4051

FIRST M.B.B.S. DEGREE EXAMINATION.

Revised (Non-Semester) Regulations

Paper **I** – **ANATOMY** – **I**

Q. P. Code : 524051

Time : Three hours **Maximum: 100 Marks**

Answer **ALL** questions.

Draw Suitable diagrams wherever necessary

I. Essay Questions : **(2 x 15 = 30)**

1. Describe the arches of foot in detail.
2. Describe the relations, ligaments, nerve supply, histology and applied anatomy of urinary bladder.

II. Write Short notes on : **(10 x 5 = 50)**

1. Descent of testis.
2. Klinefelter's syndrome.
3. Omental burse.
4. Histology of suprarenal gland.
5. Blood supply of stomach.
6. Boundaries and contents of axilla.
7. Brachialis muscle.
8. Adductor canal.
9. Extensor retinacula of leg.
10. Histology of skin.

III. Short Answer Questions : **(10 x 2 = 20)**

1. Muscles attached to extensor expansion of hand.
2. Name the structures piercing clavipectoral fascia.
3. Remnants of notochord.
4. Histological features of lymph node.
5. Contents of broad ligament.
6. Lateral rotation of hip joint.
7. Name the PIN structures.
8. Name the ligaments related to spleen.
9. Contents of pudendal canal.
10. Boundaries of auscultation triangle.

August 2011

[KZ 500] Sub. Code: 4051

FIRST M.B.B.S. DEGREE EXAMINATION.

Revised (Non-Semester) Regulations

Paper I – ANATOMY – I

Q.P. Code: 524051

Time : Three hours Maximum : 100 marks

Answer ALL questions.

Draw suitable diagrams wherever necessary

I. Essay questions : (2 x 10 = 20)

1. Describe the brachial plexus in detail under the following headings – formation, branches and applied anatomy.
2. Describe the Male urethra in detail under the following headings - extent, parts, sphincters and blood vessels.

II. Write short notes on : (10 x 5 = 50)

1. Dorsal spaces in hand.
2. Branches of axillary artery in detail.
3. Histology of kidney.
4. Locking and unlocking of knee joint.
5. Femoral nerve.
6. Formation of blastocyst.
7. Sacral plexus.
8. Second part of duodenum.
9. Internal oblique muscle.
10. Portocaval anastomosis.

III Short Answer Questions : (15 x 2 = 30)

1. Button - hole deformity.
2. Brachioradialis muscle.
3. Muscle responsible for lateral rotation movement of shoulder joint.
4. Formation of superficial palmar arch.
5. Histology of layers of aorta.
6. Palthi posture.
7. Gracilus muscles.

8. Long saphenous vein.
9. Allontois.
10. Histology of cardiac muscle.
11. Transpyloric plane.
12. Branches of superior mesenteric artery.
13. Relations of inferior surface of liver.
14. Perineal body.
15. Anal fissure.

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February 2012

[LA 500] Sub. Code: 4051

FIRST M.B.B.S DEGREE EXAMINATION

Revised (Non-Semester) Regulations

Paper I - ANATOMY - I

Q.P. Code: 524051

Time : 3 hours Maximum : 50 marks

(180 Min)

Answer ALL questions in the same order.

Draw Suitable diagrams wherever necessary

I. Elaborate on :

1. Describe the Femoral triangle under the following headings

a. Boundaries

b. Contents

c. Femoral sheath

d. Applied aspect (1 x 10 = 10)

2. Describe the Stomach under the following headings

a. Gross features

b. Relations

c. Blood supply & nerve supply

d. Applied aspect (1 x 5 = 5)

II. Write notes on: (10 x 2 = 20)

1. Deltoid muscle
2. Flexor retinaculum
3. Popliteal fossa
4. Enumerate the ligaments & bursae around the knee joint
5. Extra hepatic biliary apparatus
6. Head of pancreas
7. Prostatic part of urethra
8. Blood supply of long bone
9. Histology of kidney
10. Descent of testis

III. Short Answers: (15 x 1 = 15)

1. Contents of cubital fossa
2. Nerve supply & action of lumbrical muscle of hand
3. Name the branches of axillary artery

4. Piriformis muscle
5. Name the superficial vein of lower limb with one applied aspect
6. Muscles attached with iliotibial tract
7. Ligaments of spleen
8. Blood supply of rectum
9. Trigone of urinary bladder
10. Histology of Ureter
11. Name the Sesamoid bones
12. Syndesmosis
13. Layers of aorta with applied aspect
14. Allontois
15. Derivatives of midgut

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[LB 500] AUGUST 2012 Sub. Code: 4051

FIRST YEAR M.B.B.S DEGREE EXAM

Paper I – ANATOMY – I

Q. P. Code: 524051

Time: 180 Minutes Maximum: 100 Marks

Answer ALL questions in the same order.

I. Elaborate on: Pages Time Marks
(Max.)(Max.)(Max.)

1. Describe the anatomy of Sciatic Nerve under the following headings:
16 25 15
a. Root value and components
b. Relations
c. Arterial supply
d. Branches
e. Clinical importance

2. Enumerate the parts of Extrahepatic Biliary Apparatus.
Describe the Gall Bladder under the following headings:
16 25 15
a. Parts
b. Peritoneal relations
c. Arterial supply
d. Development
e. Applied anatomy

II. Write notes on:

1. Lymphatic drainage of Mammary Gland and its clinical importance. 3 8 5
2. Movements and muscles producing movements of Shoulder Joint. 3 8 5
3. Formation, termination and tributaries of Portal Vein. 3 8 5
4. Microscopic structure of Kidney. 3 8 5
5. Superior Radio Ulnar Joint. 3 8 5
6. Erb's paralysis. 3 8 5
7. Formation, tributaries and termination of Cephalic Vein. 3 8 5
8. Descent of Testes. 3 8 5

9. Supports of Uterus. 3 8 5
10. Medial Longitudinal Arch of Foot. 3 8 5

III. Short answers on:

1. Name the muscles which produce Inversion and Eversion of Foot. 1 5 2
2. Name the structures passing through the Pudendal Canal. 1 5 2
3. Give the root value of Musculocutaneous Nerve.and name the muscles supplied by it. 1 5 2
4. Enumerate the Intra Articular structures of Knee Joint. 1 5 2
5. Mention the boundaries and clinical importance of Bare area of Liver. 1 5 2
6. Name the contents of Femoral Sheath, in order. 1 5 2
7. Enumerate the structures passing deep to the Flexor Retinaculum of Hand. 1 5 2
8. Name the nerves which form the Subsartorial Plexus. 1 5 2
9. Name the parts of Quadriceps Femoris muscle. 1 5 2
10. Enumerate the Short Lateral Rotators of Thigh. 1 5 2

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[LC 500] FEBRUARY 2013 Sub. Code: 4051

FIRST YEAR M.B.B.S DEGREE EXAM

Paper I – ANATOMY – I

Q. P. Code: 524051

Time: 180 Minutes Maximum: 50 Marks

I. Elaborate on: (2x7.5=15)

1. Describe the **Pancreas** under the following headings

a. Type of gland with ducts
b. Gross features
c. Relations
d. Blood supply
e. Applied aspect

2. Describe the **shoulder joint** under the following headings

a. Type with articulating bones
b. Ligaments & Bursa
c. Relations
d. Movements with muscles involved
e. Applied aspect

II. Write notes on: (10x2.5=25)

1. Biceps brachii muscle
2. Applied aspects of hand
3. Clavipectoral fascia
4. Blood supply of long bone
5. Structures under cover of gluteus maximus
6. Urinary bladder (blood supply, nerve supply, Trigone & applied aspects)
7. Draw a neat diagram of coronal section of kidney with its coverings
8. Obturator nerve
9. Popliteal fossa
10. Enumerate the muscles of foot in each layer with nerve supply

III. Short answers on: (10x1=10)

1. Name the type of Epiphysis of **fibula** at both ends
2. Supra condylar fracture

3. Superficial veins of upper limb with fate.
4. Foot drop
5.Triceps surae
6.Name the ligaments around hip joint
7.Name the parts of vulva
8.Hymenal membrane
9.Perineal body (location in female with clinical importance)
10.Name any two sites of porta caval anastamosis

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[LD 500] AUGUST 2013 Sub. Code : 4051

FIRST M.B.B.S. DEGREE EXAMINATION

Paper I – ANATOMY – I

Q. P. Code : 524051

Time : Three hours Maximum: 50 Marks

Answer ALL questions.

Draw Suitable diagrams wherever necessary

I. Elaborate on: (2 x 7.5 = 15)

1. Describe the formation, pre fixed and post fixed type, branches and applied anatomy of brachial plexus.
2. Describe the relations, blood supply, lymphatic drainage and applied anatomy of stomach.

II. Write notes on: (10 x 2.5 = 25)

1. Lumbricals of hand
2. Histology of bone
3. Development of suprarenal gland
4. Lymphatic drainage of breast
5. Pronation and supination
6. Inguinal hernia
7. Great saphenous vein
8. Obturator nerve
9. Popliteus muscle
10. Ischiorectal fossa.

III. Short answers on: (10 x 1 = 10)

1. Name the openings of diaphragm and their level
2. Juxta glomerular apparatus
3. Contents of broad ligament
4. Name the types of ossification with example
5. Palmaris brevis muscle
6. Root value and muscles supplied by axillary nerve
7. Muscles attached to extensor expansion of hand

8. Mention the areas drained by superficial inguinal lymph nodes
9. Name the tributaries of portal vein
10. Cruciate anastomosis.

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VELAMMAL MEDICAL COLLEGE
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MADURAI - 625009

[LE 500] FEBRUARY 2014 Sub. Code : 4051

FIRST M.B.B.S. DEGREE EXAMINATION

Paper I – ANATOMY – I

Q. P. Code : 524051

Time : Three hours Maximum: 50 Marks

Answer ALL questions.

Draw Suitable diagrams wherever necessary

I. Elaborate on: (2 x 7.5 = 15)

1. Describe the Great saphenous vein under the following headings:

a. Formation and Termination b. Course and Relations

c. Tributaries and Perforators d. Applied Anatomy.

2. Describe the Anal canal under the following headings:

a. Interior b. Blood supply

c. Development including congenital anomalies d. Applied Anatomy

II. Write notes on: (10 x 2.5 = 25)

1. Mid palmar space
2. Musculocutaneous nerve
3. Extensor expansion of middle finger.
4. Ischiorectal fossa
5. Vascular segments of liver
6. Ligaments of knee joint
7. Flexor retinaculam
8. Classify the joints of the body giving suitable examples and describe a typical synovial joint
9. Short lateral rotators of the thigh.
10. Ligaments of uterus.

III. Short answers on: (10 x 1 = 10)

1. Name the thenar muscles
2. Name the branches given off by the radial nerve in the radial groove
3. Meckel's diverticulum
4. Name the structures crossed by the root of mesentery in order.
5. Parts of fallopian tube
6. Name the bones that form first carpometacarpal joint.
7. Boundaries of Epiploic foramen

8. Constituents of quadriceps femoris
9. Root value, branches and applied anatomy of pudental nerve
10. Name the boundaries of femoral ring.

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[LF 500] AUGUST 2014 Sub. Code: 4051

FIRST M.B.B.S. DEGREE EXAMINATION

Paper I – ANATOMY – I

Q. P. Code : 524051

Time: Three Hours Maximum: 50 Marks

Answer ALL questions.

Draw Suitable diagrams wherever necessary

I. Essay: (1 x 10 = 10)

1. Describe the boundaries, contents and applied anatomy of femoral triangle.

II. Write Notes on: (2 x 5 = 10)

1. Portal vein
2. Elbow joint.

III. Short Answers on: (10 x 3 = 30)

1. Clavipectoral fascia
2. Blood supply of gonads
3. Quadrangular space
4. Cryptorchism
5. Histology of duodenum
6. Perineal body
7. Gluteus medius
8. Results of fertilization
9. Skin
10. Sciatic nerve.

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[LF 500] NOVEMBER 2014 Sub. Code: 4051

FIRST M.B.B.S. DEGREE EXAMINATION

Paper I – ANATOMY – I

Q. P. Code : 524051

Time: Three Hours Maximum: 50 Marks

Answer ALL questions.

Draw Suitable diagrams wherever necessary

I. Essay: (1 x 10 = 10)

1. Describe the type, ligaments, relations, movements and muscles producing the movements and applied anatomy of shoulder joint.

II. Write Notes on: (2 x 5 = 10)

1. Inquinal canal
2. Femoral artery

III. Short Answers on: (10 x 3 = 30)

1. Mesentery
2. Cartilage
3. Somites
4. Wrist drop
5. Histology of ovary
6. Stomach bed
7. Axillary vein
8. Developmental anomalies of kidney
9. Adductor canal
10. Boundaries and contents of popliteal fossa.

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[LG 500] FEBRUARY 2015 Sub. Code : 4051
FIRST M.B.B.S. DEGREE EXAMINATION
PAPER I – ANATOMY – I
Q. P. Code : 524051

Time : Three hours **Maximum: 50 Marks**

Answer ALL questions.

I. Essay : (1 x 10 = 10)

1. Describe the position, peritoneal and visceral relations, supports, microstructure
and applied anatomy of uterus.

II. Write notes on: (2x5=10)

1. Axillary artery.
2. Ligaments of knee joint.

III. Short answers on: (10 x 3 = 30)

1. Median nerve in hand.
2. Rectus sheath.
3. Hamstring muscles.
4. Microscopic anatomy of
5. Pronation and supination.
6. Second part of duodenum
7. Synovial joints.
8. Deep peroneal nerve.
9. Development of kidney.
10. Winging of scapula.

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AUGUST 2015 Sub. Code: 4051

FIRST M.B.B.S. DEGREE EXAMINATION

PAPER I – ANATOMY - I

Q.P. Code: 524051

Time : Three Hours Maximum : 50 marks

Answer ALL questions

I. Elaborate: (1 x 10 = 10)

1. Describe the type, ligaments, relations, movements and muscles producing the movements and applied anatomy of Hip Joint.

II. Write notes on : (2 x 5 = 10)

1. Superior Mesenteric Artery.
2. Formation and branches of Brachial Plexus.

III. Short answers on : (10 x 3 = 30)

1. Ossification.
2. Spermatic cord.
3. Carpal Tunnel Syndrome.
4. Histology of Kidney.
5. Notochord.
6. Recto uterine Pouch.
7. Biceps Brachii muscle.
8. Annular Pancreas.
9. Peripheral Heart.
10. Great Saphenous Vein.

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[LI 500] NOVEMBER 2015 Sub. Code: 4051

FIRST M.B.B.S. DEGREE EXAMINATION

PAPER I – ANATOMY - I

Q.P. Code: 524051

Time : Three Hours Maximum : 50 marks

Answer ALL questions

I. Elaborate: (1 x 10 = 10)

1. Describe the Root value, Course, Relations, Branches and distribution and applied anatomy of Sciatic nerve.

II. Write notes on : (2 x 5 = 10)

1. Radio Ulnar joint.
2. Vermiform Appendix.

III. Short answers on : (10 x 3 = 30)

1. Histology of Cardiac muscle.
2. Blood supply of Pancreas.
3. Spermatogenesis.
4. Rotator Cuff.
5. Histology of Suprarenal gland.
6. Supports of Uterus.
7. Flexor Retinaculum of Hand.
8. Cloaca and its derivatives.
9. Popliteus muscle.

10. Cruciate anastomosis.

February 2009

[KU 501] **Sub. Code : 4052**

FIRST M.B.B.S. DEGREE EXAMINATION.
Revised (Non-Semester) Regulations
Paper II – ANATOMY – II
Q. P. Code : *524052*

Time : Three hours **Maximum: 100 Marks**

Answer ALL questions.
Draw Suitable diagrams wherever necessary

I. Essay Questions : **(2 x 15 = 30)**

1. Describe the tongue under the following headings:
   Situation and parts, Blood supply, Lymphatic drainage, Histology and development.

2. Describe the interior of right atrium and correlate it with its development.

II. Write Short notes on : **(10 x 5 = 50)**

1. Ciliary ganglion.
2. Facial artery.
3. Inter peduncular fossa.
4. Mid line structures of the neck.
5. Histology of cornea.
6. Pleural recesses.
7. Development of thyroid gland.
8. Lateral medullary syndrome.
9. Subclavian triangle.
10. T.S. At the level of superior colliculus of mid brain.

III. Short Answer Questions : **(10 x 2 = 20)**

1. What is ligamentum arteriosum?

2. Significance of pyriform fossa.
3. Name the muscles of mastication.
4. Give the sub divisions of mediastinum.
5. What are Hassal's corpuscles?
6. Name the splanchnic nerves in the thoracic region.
7. What is danger area of face?
8. Give the attachment of supra pleural membrane.
9. What is insula?
10. What is visual stria?

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VELAMMAL MEDICAL COLLEGE
HOSPITAL AND RESEARCH INSTITUTE
MADURAI - 625009

August 2009

[KV 501] **Sub. Code : 4052**

FIRST M.B.B.S. DEGREE EXAMINATION.
Revised (Non-Semester) Regulations
Paper II – ANATOMY – II
Q. P. Code : *524052*

Time : Three hours **Maximum: 100 Marks**

Answer ALL questions.
Draw Suitable diagrams wherever necessary

I. Essay Questions : **(2 x 15 = 30)**

1. Explain thyroid gland under the following headings:
   a) Location & parts **b)** Coverings **c)** Relations
   d) Blood supply **e)** Histology **f)** Development
   g) Applied Anatomy.

2. Explain the typical intercostal space.

II. Write Short notes on : **(10 x 5 = 50)**

1. Development of face.
2. Otic ganglion.
3. Cerebellar peduncles.
4. Right Atrium.
5. Extraocular muscles.
6. Palatine tonsil.
7. Nerve Supply of tongue.
8. Tympanic membrane.
9. Bronchopulmonary segments.
10. Ansacervicalis.

III. Short Answer Questions : **(10 x 2 = 20)**

1. Draw and label the histology of trachea.
2. Name the structures present in the lateral wall of cavernous sinus.
3. Nerve supply of larynx.
4. Parts of corpus callosum.
5. Four derivatives of ectoderm.

6. Enumerate four branches of 1st part of maxillary artery.
7. Structures passing through the foramen ovale.
8. Tributaries of coronary sinus.
9. Name the bones forming the nasal septum.
10. Name muscles of mastication.

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VELAMMAL MEDICAL COLLEGE
HOSPITAL AND RESEARCH INSTITUTE
MADURAI - 625009

February 2010

[KW 501] **Sub. Code : 4052**

FIRST M.B.B.S. DEGREE EXAMINATION.
Revised (Non-Semester) Regulations
Paper II – ANATOMY – II
Q. P. Code : *524052*

Time : Three hours **Maximum: 100 Marks**

Answer ALL questions.
Draw Suitable diagrams wherever necessary

I. Essay Questions : **(2 x 15 = 30)**

1. Describe the superolateral surface of the cerebral hemisphere under the following headings:
   Sulci and Gyri, functional areas and arterial supply.

2. Describe the arch of aorta under the following headings:
   Extent, Relations, Branches and microscopic anatomy.

II. Write Short notes on : **(10 x 5 = 50)**

1. Vocal cord.
2. Hilum of right lung.
3. Styloid apparatus.
4. Histology of parathyroid gland.
5. Development of interatrial septum.
6. Parotid duct.
7. Blood supply of spinal cord.
8. Venous drainage of face.
9. Middle meatus of nose.
10. Carotid sheath.

III. Short Answer Questions : **(10 x 2 = 20)**

1. Name the bones taking part in the formation of nasal septum.
2. Name the structures passing through foramen spinosum.
3. Name any two nerves emerging from medulla oblongata.
4. Name any two structures in relation to mediastinal surface of left lung.
5. Name the parts of lacrimal apparatus.

6. Name the arteries which supply the heart.
7. Name the infrahyoid muscles of the neck.
8. Name the muscles of mastication.
9. Name the terminal branches of facial nerve.
10. Name the unpaired cartilages of the larynx.

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August 2010

[KX 501] Sub. Code : 4052

FIRST M.B.B.S. DEGREE EXAMINATION.

Revised (Non-Semester) Regulations

Paper II – ANATOMY – II

Q. P. Code : 524052

Time : Three hours Maximum: 100 Marks

Answer **ALL** questions.

Draw Suitable diagrams wherever necessary

I. Essay Questions : (2 x 15 = 30)

1. Describe the parotid gland under the following headings : i) Location and parts ii) Relations iii) Covering iv) Nerve Supply v) Applied anatomy.
2. Describe in detail congenital anomalies of the Heart.

II. Write Short notes on : (10 x 5 = 50)

1. Development of tongue.
2. Facial artery.
3. Nerve supply of lacrimal gland.
4. Histology of pituitary gland.
5. Atlanto axial joints.
6. Hyoglossus Muscle.
7. Cardiac plexuses.
8. Right coronary artery.
9. Mediastinal surface of left lung.
10. Klinefelter syndrome.

III. Short Answer Questions : (10 x 2 = 20)

1. Mention different parts of Diencephalon.
2. Emissary Veins.
3. Lacus lacrimalis.
4. Lymphatic drainage of the face.
5. Horner's Syndrome.
6. Histology of skeletal muscle.
7. Triangle of koch.
8. Barr body.
9. Types of Chromosomes.
10. Bones derived from 1st pharyngeal arch.

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February 2011

[KY 501] Sub. Code : 4052

FIRST M.B.B.S. DEGREE EXAMINATION.

Revised (Non-Semester) Regulations

Paper **II** – **ANATOMY** – **II**

Q. P. Code : 524052

Time : Three hours **Maximum: 100 Marks**

Answer **ALL** questions.

Draw Suitable diagrams wherever necessary

I. Essay Questions : **(2 x 15 = 30)**

1. Describe the cerebellum as: classification, connections, nuclei, blood supply and clinical anatomy.
2. Describe in boundaries, contents and clinical anatomy of Carotid triangle.

II. Write Short notes on : **(10 x 5 = 50)**

1. Histology of Parotid gland.
2. Histology of Cornea.
3. Development of lung.
4. Internal capsule.
5. Typical intercostal nerve.
6. Cavernous sinus.
7. Connections of basal ganglia.
8. Blood supply of thyroid gland.
9. Lymphatic drainage of tongue.
10. Maxillary air sinus.

III. Short Answer Questions : **(10 x 2 = 20)**

1. Enumerate the muscles of palate.
2. Two features of Naso-pharynx.
3. Congenital anomalies of ventricles of heart.
4. Derivatives of second pharyngeal arch.
5. Arteries supplying the spinal cord.
6. Boundaries of sub-mental triangle.
7. Structures present at hilum of left lung.
8. Name the unpaired dural venous sinuses.
9. Intrinsic muscles of larynx.
10. Waldeyer's ring.

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August 2011

[KZ 501] Sub. Code: 4052

FIRST M.B.B.S. DEGREE EXAMINATION.

Revised (Non-Semester) Regulations

Paper II – ANATOMY – II

Q.P. Code: 524052

Time : Three hours Maximum : 100 marks

Answer ALL questions.

Draw suitable diagrams wherever necessary

I. Essay questions : (2 x 10 = 20)

1. Describe in detail about blood supply of brain.
2. Describe submandibular salivary gland under following heading:
parts, relations, blood supply, nerve supply, lymphatic drainage and clinical anatomy.

II. Write short notes on : (10 x 5 = 50)

1. Azygos vein
2. Relations of arch of aorta
3. Left coronary artery
4. Histology of cerebral cortex
5. Corpus callosum
6. Horns of lateral ventricle
7. Contents of posterior triangle
8. Extrinsic muscles of tongue
9. Brachiocephalic vein
10. Development of atria

III Short Answer Questions : (15 x 2 = 30)

1. Interventricular septum
2. Costodiaphragmatic recess
3. Tricuspid valve
4. Oblique fissure of lung
5. Demilunes
6. Falx cerebelli
7. Substantia nigra
8. List special somatic afferent nuclei
9. Functional areas of superior temporal gyrus
10. Waldeyer's ring

11. Middle cervical ganglion
12. Parotid duct
13. Fenestra vestibule
14. Epicranial aponeurosis
15. Derivatives of third aortic arch

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February 2012

[LA 501] Sub. Code: 4052

FIRST M.B.B.S DEGREE EXAMINATION

Revised (Non-Semester) Regulations

Paper II - ANATOMY - II

Q.P. Code: 524052

Time : 3 hours Maximum : 50 marks

(180 Min)

Answer ALL questions in the same order.

Draw Suitable diagrams wherever necessary

I. Elaborate on :

1. Describe the Thyroid gland under following headings:

a. Gross features

b. Relations

c. Blood supply

d. Applied anatomy (1 x 10 = 10)

2. Describe the Right lung under following headings:

a. Pleura

b. Relations of medial surface

c. Bronchopulmonary segments

d. Applied anatomy (1 x 5 = 5)

II. Write notes on: (10 x 2 = 20)

1. Pterion

2. Blood supply & nerve supply of scalp

3. 2nd pharyngeal arch

4. Histology of retina

5. Fourth ventricle

6. Name the muscles with nerve supply & action of tongue

7. Digastric triangle

8. Superior mediastinum

9. Down's syndrome

10. Pericardial sinuses

III. Short Answers: (15 x 1 = 15)

1. Parts of corpus callosum

2. Deep nuclei of cerebellum

3. Tentorium cerebelli
4. Name any four branches of external carotid artery
5. Name the components of lacrimal apparatus
6. Name the extraocular muscles of eyeball
7. Development of pituitary gland (in brief)
8. Mention the boundaries of laryngeal inlet
9. Right principal bronchus
10. Pleural diaphragm
11. Moderator band
12. Triangle of Koch
13. Simple squamous epithelium
14. Mention the four features of Tetralogy of Fallot
15. Mention the bones of middle ear cavity

[LB 501] AUGUST 2012 Sub. Code: 4052

FIRST YEAR M.B.B.S DEGREE EXAM

Paper II – ANATOMY – II

Q. P. Code: 524052

Time: 180 Minutes Maximum: 100 Marks

Answer ALL questions in the same order.

I. Elaborate on: Pages Time Marks
(Max.)(Max.)(Max.)

1. Classify the **White matter of cerebrum** and describe internal capsule under the following headings:

a. Parts and Relations
b. Constituent fibres
c. Arterial supply
d. Applied Anatomy 16 25 15

2. Define **Mediastinum.** Name its subdivisions. Name the contents of posterior mediastinum and describe oesophagus under the following headings:

a. Level of origin
b. Parts and Relations
c. Level of constrictions
d. Microscopic appearance
e. Development 16 25 15

II. Write notes on:

1. Lateral medullary syndrome. 3 8 5
2. Cavernous sinus. 3 8 5
3. Pterygo palatine ganglion. 3 8 5
4. Carotid triangle. 3 8 5
5. Inter atrial septum. 3 8 5
6. Pathway of visual reflexes. 3 8 5
7. Circle of Willis. 3 8 5
8. Intrinsic muscles of larynx. 3 8 5
9. Median nasal septum. 3 8 5
10. External acoustic meatus. 3 8 5

III. Short Answers on:

1. Formation and termination of external jugular vein
1 5 2

2. Peculiarities of 1
st
intercostal nerve 1 5 2
3. Lumbar Puncture
1 5 2
4. Structures lodged in the lateral sulcus of the cerebrum
1 5 2
5. Dangerous area of face
1 5 2
6. Formation and termination of Left superior 1 5 2
intercostal vein
7. Suboccipital nerve
1 5 2
8. Ligamentum denticulatum 1 5 2
9. Structures pierced by parotid duct in order
1 5 2

10.Origin and Branches of Middle Meningeal artery. 1 5 2
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[LC 501] FEBRUARY 2013 Sub. Code: 4052

FIRST YEAR M.B.B.S DEGREE EXAM

Paper II – ANATOMY – II

Q. P. Code: 524052

Time: 180 Minutes Maximum: 50 Marks

I. Elaborate on: (2x7.5=15)

1. Describe the **Spinal cord** under the following headings.
a. Extent with coverings
b. External features & Enlargements
c. Cross section at mid thoracic level
d. Blood supply
e. Applied aspects
2. Describe the **Tongue** under the following headings
a. Gross features
b. Papillae
c. Muscles with action
d. Nerve supply
e. Lymphatic drainage
f. Applied aspects

II. Write notes on: (10x2.5=25)

1. Thoracic duct
2. Pericardium
3. Mediastinal surface of left lung
4. Venous drainage of heart
5. Sagital section of eye ball
6. Paranasal air sinuses (name, Functions, opening, area, applies aspects)

7. Part & Constituent fibres of internal capsule
8. Middle ear cavity
9. Meninges with Meningeal spaces
10. Supero lateral surface of cerebrum

III. Short answers on: (10x1=10)

1. Supra sternal space of Burns
2. Dangerous area of face
3. Structures passing through foreman ovale
4. Boundaries of Laryngeal inlet
5. Branches of ascending & arch of aorta
6. Lumbar puncture
7. Pterion
8. Apex beat
9. Contents pf posterior Mediastinum
10. Applied aspects of pleura.

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MADURAI - 625009

[LD 501] AUGUST 2013 Sub. Code : 4052

FIRST M.B.B.S. DEGREE EXAMINATION

Paper II – ANATOMY – II

Q. P. Code : 524052

Time : Three hours **Maximum: 50 Marks**

Answer ALL questions.

Draw Suitable diagrams wherever necessary

I. Elaborate on: (2 x 7.5 = 15)

1. Describe boundaries and contents of carotid triangle.
2. Describe origin, course, branches of right coronary artery.

II. Write notes on: (10 x 2.5 = 25)

1. Parts of corpus callosum
2. Name the extra ocular muscles
3. Facial artery in face
4. Formation of superior vena cava
5. Phrenic nerve
6. Lateral pterygoid muscle
7. Styloid process-structures attached
8. Surfaces, borders of thyroid gland
9. Muscles of tongue
10. Posterior horn of lateral ventricle.

III. Short answers on: (10 x 1 = 10)

1. Terminal branches of external carotid artery
2. Arterial supply to pituitary
3. Dangerous area of face
4. Opening of maxillary sinus
5. Auditory tube openings
6. Blood supply to tonsil
7. Nerve supply and action of cricothyroid muscle
8. Attachment of vocalcord
9. Blood supply to lung
10. Terminal branches of internal thoracic artery.

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[LE 501] FEBRUARY 2014 Sub. Code : 4052

FIRST M.B.B.S. DEGREE EXAMINATION

Paper II – ANATOMY – II

Q. P. Code : 524052

Time : Three hours **Maximum: 50 Marks**

Answer ALL questions.

Draw Suitable diagrams wherever necessary

I. Elaborate on: (2 x 7.5 = 15)

1. Describe the sulci, gyri and functional areas in superolateral surface of brain with neat labelled diagrams.
2. Describe the extra ocular muscles in detail.

II. Write notes on: (10 x 2.5 = 25)

1. Ansa cervicalis
2. Ciliary ganglion
3. Parts, arterial supply of Interventricular septum.
4. Cardiac plexus.
5. Middle ear
6. Origin, Termination and applied anatomy of internal mammary artery.
7. Digastric triangle
8. Third ventricle.
9. Medulla oblongata at mid olivary level.
10. Superior mediastinum

III. Short answers on: (10 x 1 = 10)

1. Formation of basal vein
2. Surface marking of apex beat of heart
3. Blood supply of internal capsule.
4. Parts of caudate nucleus.
5. Dangerous area of scalp.
6. Patent ductus arteriosus.
7. Formation and distribution of spinal part of the accessory nerve.
8. Name any four branches of external carotid artery.

9. Define typical intercostal nerve with example.
10. Tributaries of cavernous sinus.

[LF 501] AUGUST 2014 Sub. Code : 4052

FIRST M.B.B.S. DEGREE EXAMINATION

Paper II – ANATOMY – II

Q. P. Code : 524052

Time : Three hours **Maximum: 50 Marks**

Answer ALL questions.
Draw Suitable diagrams wherever necessary

I. Elaborate on: (1 x 10 = 10)

1. Describe the interior of right atrium in detail and add a note about its development and clinical anatomy.

II. Write Notes on: (2 x 5 = 10)

1. Lateral wall of nose
2. Midbrain at superior collicular level.

III. Short Answers on: (10 x 3 = 30)

1. Orbicularis oculi muscle
2. Blood supply of thyroid gland
3. Azygos vein
4. Pleural recesses
5. Histology of thymus
6. Boundaries and contents of sub occipital triangle
7. Pineal gland
8. Lateral medullary syndrome
9. Lumbar puncture
10. Development of tongue.

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[LF 501] NOVEMBER 2014 Sub. Code: 4052

FIRST M.B.B.S. DEGREE EXAMINATION

Paper II – ANATOMY – II

Q. P. Code : 524052

Time: Three Hours Maximum: 50 Marks

Answer ALL questions.

Draw Suitable diagrams wherever necessary

I. Essay: (1 x 10 = 10)

1. Classify the white matter of cerebrum with examples and describe the internal capsule in detail. Add a note on its applied Anatomy.

II. Write Notes on: (2 x 5 = 10)

1. Eustachian tube
2. Typical intercostals nerves

III. Short Answers on: (10 x 3 = 30)

1. Inferior constrictor of pharynx
2. Blood supply of spinal cord
3. Carotid sheath
4. Left brachiocephalic vein
5. Histology of thyroid gland
6. Parkinsonism
7. Pterygopalatine ganglion
8. Structures present at T4 level

9. Hilum of right lung

10. Development of pituitary gland.

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[LG 501] FEBRUARY 2015 Sub. Code : 4052
FIRST M.B.B.S. DEGREE EXAMINATION
PAPER II – ANATOMY – II
Q. P. Code : 524052

Time : Three hours **Maximum: 50 Marks**

Answer ALL questions.

I. Essay : (1 x 10 = 10)

1. Describe the blood supply of heart. Add a note about its clinical significance.

II. Write notes on: (2x5=10)

1. Lacrimal apparatus.

2. Sulci, gyri and functional areas of supero – lateral surface of cerebrum.

III. Short answers on: (10 x 3 =

30)

1. Falx cerebri.

2. Superior laryngeal nerve.

3. Histology of cerebellum.

4. Muscles of mastication.

5. Development of interatrial septum.

6. Maxillary sinus.

7. Basilar artery.

8. Vocal cords.

9. Bell's palsy.

10. Broncho – pulmonary segments.

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[LH 501] **AUGUST 2015** **Sub. Code: 4052**

FIRST M.B.B.S. DEGREE EXAMINATION

PAPER II – ANATOMY - II

Q.P. Code: 524052

Time : Three Hours **Maximum : 50 marks**

Answer ALL questions

I. Elaborate: (1 x 10 = 10)

1. Classify Dural Venous Sinuses. Describe the Cavernous sinus in detail.

   Add a note on its applied anatomy.

II. Write notes on : (2 x 5 = 10)

1. Nucleus, course, distribution and applied anatomy of Hypoglossal nerve.
2. Blood supply of Brain.

III. Short answers on : (10 x 3 = 30)

1. Nasal Septum.
2. Floor of 4th Ventricle.
3. Histology of Palatine Tonsil.
4. Otic Ganglion.
5. Cross sectional diagram of a typical intercostal space.
6. Fallot's Tetralogy.
7. Corpus Callosum.
8. Interior of Right Atrium.
9. Boundaries and Contents of Posterior Mediastinum.
10. Muscles of Tongue.

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[LI 501] **NOVEMBER 2015** **Sub. Code: 4052**

FIRST M.B.B.S. DEGREE EXAMINATION

PAPER II – ANATOMY - II

Q.P. Code: 524052

Time : Three Hours **Maximum : 50 marks**

Answer ALL questions

I. Essay: (1 x 10 = 10)

1. Describe the Origin, Course, Relations, Branches and Clinical Anatomy of Abducent Nerve.

II. Write notes on : (2 x 5 = 10)

1. Draw a labeled diagram of Blood Supply of Thyroid Gland with its development.
2. Left Coronary Artery.

III. Short answers on : (10 x 3 = 30)

1. Histological Layers of Cornea.
2. Cricoid Cartilage – Characteristic Features.
3. Branches of Descending Thoracic Aorta.
4. Pleural Recesses.
5. Waldeyer's Ring.
6. Buccinator muscle.
7. Sub Clavian Vein – Formation, Course and Termination.
8. Derivatives of Neural Tube.

9. Area of Epistaxis.
10. Thoracic Duct – Area of Drainage.

VELAMMAL MEDICAL COLLEGE
HOSPITAL AND RESEARCH INSTITUTE
MADURAI - 625009

August 2008

[KT 501] **Sub. Code : 4052**

FIRST M.B.B.S. DEGREE EXAMINATION.

Revised (Non-Semester) Regulations

Paper **II – ANATOMY – II**

Q. P. Code : 524052

Time : Three hours Maximum: 100 Marks

Answer **ALL** questions.
Draw Suitable diagrams wherever necessary

I. Essay questions : **(2 x 15 = 30)**

1. Describe the cavernous sinus under the following headings :- situation, extent, boundaries, relations, contents, connections and applied anatomy.

2. Describe the right lung under the following headings:-
Surfaces, borders, impressions, fissures, lobes, hilum and Broncho pulmonary segments.

II. Write Short notes on : **(10 x 5 = 50)**

1. Rhomboid Fossa.
2. Maxillary Air sinus.
3. Labelled diagram of superolateral Surface of Cerebrum, indicating major Functional Areas.
4. Histology of Retina.
5. Coronary Sinus.
6. Ansa Cervicalis
7. Blood supply of Spinal cord.
8. Derivatives of I Branchial Arch
9. Medial wall of Middle ear.
10. Hyoglossus Muscle – attachments & Relations.

III. Short Answer Questions : **(10 x 2 = 20)**

1. Name the bones meeting at pterion.
2. Indicate the sinuses of the pericardium.
3. Name the terminal branches of internal thoracic Artery.
4. Indicate the Paleocerebellar deep nuclei.
5. Name the muscles attached to the cricoid cartilage.
6. Name two Sensory thalamic nuclei.
7. Name the structures passing through internal acoustic meatus.
8. Name the two parts of orlicularis occuli .
9. Name the Lingual papillae.
10. Indicate the venous sinuses related to the falx cerebri.

ANATOMY

Chapter wise questions and Assignment Questions

General anatomy

Short notes 5 marks

1. Blood supply of long bones
2. A typical synovial joint
3. Synovial joints
4. Types of epiphysis with examples
5. Sesamoid bone
6. Cartilaginous joints
7. Classify the joints of the body giving suitable examples and describe a typical synovial joint
8. Ossification

Brief answers 3 marks

1. Name the types of ossification with example
2. Skin
3. Sesamoid bone
4. Syndesmosis
5. Cartilage
6. Periosteum

Upper limb

Long questions 10 marks

1. Describe gross anatomy, blood supply, lymphatic drainage and applied aspect of **mammary gland**. Extension, bed
2. Describe **shoulder joint** under the following headings- articulating parts, ligaments, synovial sheath and bursae around the joint, movements and muscles producing them and clinical anatomy.
3. Describe the formation, parts, relations, branches and applied anatomy of **brachial plexus**
4. Describe **axillary artery** under the following headings- origin and termination, course, relations, branches
5. Describe the formation, course, relations, branches of distribution and effects of injury of **median nerve**
6. Describe the formation, course, relations, branches and distribution of radial nerve and effects of injury of **radial nerve**

Short notes 5 marks

1. Lumbricals of hand
2. Anatomical snuff box
3. Carpometacarpal joint of thumb
4. The radial nerve in the spiral groove
5. Ulnar nerve in hand
6. Structures under cover of deltoid muscle
7. Pronation and supination
8. Lymphatic drainage of mammary gland
9. Anastomosis around elbow

10. Triceps brachii
11. Clavipectoral fascia
12. Boundaries and contents of quadrangular space
13. Median nerve in hand
14. Cubital fossa
15. Erb's paralysis
16. Cutaneous innervation of hand
17. Arteria profunda brachii
18. Axillary lymph nodes
19. Carpel tunnel
20. Boundaries and contents of axilla
21. Brachialis muscle
22. Dorsal spaces in hand
23. Branches of axillary artery in detail
24. Deltoid muscle
25. Flexor retinaculum
26. Superior radioulnar joint
27. Formation, tributaries and termination of cephalic vein
28. Movements and muscles producing them in shoulder joint
29. Biceps brachii muscle
30. Applied aspect of hand

Brief answers 3 marks

1. Clavipectoral fascia
2. Quadrangular space

3. Mid palmar space
4. Musculocutaneous nerve
5. Extensor expansion of middle finger.
6. Pronation and supination
7. Lymphatic drainage of breast
8. Lumbricals of hand
9. Biceps brachii muscle
10. Applied aspects of hand
11. Superior Radio Ulnar Joint.
12. Erb's paralysis.

Lower limb

Long questions 10 marks

1. Describe the **arches of foot** under the following headings- types, purpose, factors supporting the arch system and applied anatomy. Name the arches and their constitution factors maintaining them
2. Describe **hip joint** under following headings- articular surfaces, ligaments, movements and muscles producing the movements and applied anatomy. Type of joint and bones taking part, relations
3. Describe **sciatic nerve** under the following headings- origin and termination, course, relations, branches and applied anatomy
4. Describe **femoral triangle** under following headings- boundaries, contents, femoral sheath, applied aspect

Short notes 5 marks

1. Deep peroneal nerve
2. Subtalar joint
3. Adductor canal
4. Great saphenous vein
5. Gluteus medius muscle
6. Popliteal artery
7. Femoral sheath- formation, contents and applied anatomy
8. Cutaneous nerve supply of foot
9. Cruciate ligament of knee joint
10. Dorsalispedis artery
11. Saphenous vein
12. Abductors of hip joint and their role in gait
13. Popliteus muscle
14. Popliteal fossa
15. Menisci of knee joint
16. Obturator nerve
17. Medial longitudinal arch of foot
18. Ligaments around hip joint
19. Peroneal retinacula
20. Extensor retinacula of leg
21. Locking and unlocking of knee joint
22. Femoral nerve
23. Sacral plexus
24. Structures under cover of gluteus maximus
25. Enumerate the muscles of foot in each layer with nerve supply

Thorax

Long questions 10 marks

1. Define **Mediastinum**. Name its subdivisions. Name the contents of posterior mediastinum & describe oesophagus under the following headings- level of origin, parts & relations, level of constrictions, microscopic appearance, development.
2. Describe the **Right lung** under the following headings- pleura, relations of medial surface, bronchopulmonary segments, applied anatomy. Surfaces, borders, impressions, fissures, lobes, hilum
3. Describe the arch of aorta under the following headings- extent, relations, branches, and microscopic anatomy
4. Explain the typical intercostal space
5. Describe the interior of right atrium and correlate it with its development
6. Describe the blood supply and venous drainage of heart
7. Describe the bronchopulmonary segments under the following headings- definition, numbers, blood supply, nerve supply and applied anatomy
8. Describe the heart under the following headings- position, coverings, internal features, conducting and skeletal system and applied anatomy
9. Define typical intercostal nerve. Describe its course and distribution. Add a note on its clinical importance
10. Describe the **thoracic diaphragm** under the following headings- parts, attachments, major and minor openings, blood supply, nerve supply, actions and applied anatomy
11. Describe the **lung** under the following headings- . external features, fissures, lobes, bronchopulmonary segments, applied anatomy

12. Describe the **pleura** under the following headings- parts and recesses, blood supply, nerve supply, lymphatic drainage, surface marking and applied anatomy

Short notes 5 marks

1. Thoracic duct
2. Pericardium
3. Mediastinal surface of left lung
4. Venous drainage of heart
5. Inter atrial septum
6. Superior mediastinum
7. Pericardial sinuses
8. Azygous vein
9. Relations of arch of aorta
10. Left coronary artery
11. Brachiocephalic vein
12. Typical intercostal nerve
13. Cardiac plexuses
14. Right coronary artery
15. Hilum of right lung
16. Right atrium
17. Bronchopulmonary segments
18. Pleural recesses
19. Coronary sinus
20. Nerve supply of heart
21. Medial surface of right lung
22. Arch of aorta
23. Superior vena cava

24.Oesophagus

25.1st intercostal nerve

26.1st part of subclavian artery

27.Blood vessels of heart

28.Internal mammary artery

29.Cervical pleura

30.Sternal angle

Brief answers 3 marks

1. Suprasternal space of burns
2. Branches of ascending and arch of aorta
3. Apex beat
4. Contents of posterior mediastinum
5. Applied aspects of pleura
6. Peculiarities of 1st intercostal nerve
7. Formation and termination of left superior intercostal vein
8. Interventricular septum
9. Costodiaphragmatic recess
10. Tricuspid valve
11. Oblique fissure of lung
12. Middle cervical ganglion
13. Right principal bronchus
14. Pleural diaphragm
15. Moderator band
16. Triangle of Koch
17. Structures at hilum of left lung

18. Horner's syndrome
19. Tributaries of coronary sinus
20. Suprapleural membrane
21. Name the splanchnic nerves in thoracic region

Abdomen and pelvis

Long questions 10 marks

1. Describe **pancreas** under the following headings- type of gland, gross features, relations, blood supply and clinical anatomy. Development, microscopic anatomy, morphology,
2. Enumerate parts of **extrahepatic biliary apparatus**. Describe **gall bladder** under the following headings- parts, peritoneal relations, arterial supply, development and clinical anatomy.
3. Describe **stomach** under the following headings- gross features, relations, blood supply, nerve supply and clinical anatomy. Lymphatic drainage, microscopic anatomy
4. Describe **male urethra** under the following headings- extent, parts, sphincters and blood vessels
5. Describe the relations, ligaments, nerve supply, histology and applied anatomy of **urinary bladder**. Surfaces, borders, blood supply
6. Describe **uterus** under the following headings- position and parts, relations, blood supply, ligaments and support, development, histology and clinical anatomy.
7. Describe the relations, blood supply and microscopic structure of **duodenum.** Location and extent, development, applied anatomy.

8. Describe **prostate** under the following headings-situation and lobes, blood supply, histology, age changes and clinical anatomy.
9. Describe the formation, termination, course, tributaries and relations of **portal vein**
10. Describe **anal canal** parts, position, interior relations, blood supply, lymphatic drainage and applied aspects
11. Describe the origin, insertion, action, openings, features, dev, blood supply and nerve supply of the **diaphragm**
12. Describe **right kidney** under the following headings- coverings, relations, blood supply, surface marking on back, functional unit and its microscopic structure, development and developmental anomalies and clinical anatomy.

Short notes 5 marks

1. Internal vertebral venous plexus
2. Deep perineal pouch
3. Inguinal canal
4. Diaphragm
5. Inguinal lymph nodes
6. Portal vein
7. Ureter
8. Perineal body
9. Trigone of bladder
10. Perineal membrane
11. Lesser sac
12. Inferior mesenteric artery
13. Pelvic diaphragm

14. 2nd part of duodenum
15. Prostatic part of urethra
16. Lymphatic drainage of stomach
17. Ischiorectal fossa
18. Mesentery
19. Rectus sheath
20. Coeliac ganglion
21. Inguinal ligament
22. Ligaments of liver
23. Structure of kidney
24. Superficial perineal pouch
25. Thoracolumbar fascia
26. Coeliac trunk
27. Epiploic foramen
28. Supports of uterus
29. Hepatorenal pouch
30. Omental bursa
31. Blood supply of stomach
32. Internal oblique muscle
33. Portocaval anastomosis
34. Extrahepatic biliary apparatus
35. Head of pancreas
36. Formation, tributaries and termination of portal vein
37. Urinary bladder- blood supply, nerve supply, trigone and applied aspects
38. Draw a neat diagram of coronal section of kidney with its coverings

Brief answers 1marks

1. Hymenal membrane
2. Perineal body
3. Parts of vulva

Head and neck

Long questions 10 marks

1. Describe the **tongue** under the following headings- gross features, papillae, muscles with action, nerve supply, lymphatic drainage, applied aspects. Situation and parts, blood supply, histology and development.
2. Describe **submandibular salivary gland** under the following headings- parts, relations, blood supply, lymphatic drainage and clinical anatomy. Nerve supply, dev, histology,
3. Describe the **Thyroid gland**under the following headings- gross features, relations,blood supply, applied anatomy. Location and parts, coverings, histology, development.
4. Describe boundaries, contents and clinical anatomy of **Carotid triangle**
5. Describe **parotid gland** under the following headings- location and parts, relations, covering, nerve supply and applied anatomy. Extension, features, structures lying within the gland
6. Describe **cavernous sinus**under the following headings- situation, extent, boundaries, relations, contents, connections and applied anatomy.
7. Describe the **muscles of mastication** under following headings- origin, insertion, relations, nerve supply, action
8. Describe the **pharynx** under the following headings- extent, divisions, internal features, musculature, structures related and applied anatomy

9. Describe the **temporomandibular joint** under the following headings- articular surfaces, ligaments, movements and muscles producingmovementsand applied anatomy
10. Mention and classify **dural venous sinuses**. Describe **cavernous sinus** giving its tributaries, relations, contents, connections and applied anatomy.
11. **Scalp** in detail, add a note on its clinical significance

Short notes 5 marks

1. Sagittal section of eyeball
2. Paranasal air sinuses- name, function, opening, area, applied aspect.
3. Middle ear cavity
4. Meninges with meningeal spaces
5. Contents of posterior triangle
6. Extrinsic muscles of tongue
7. Blood supply & nerve supply of scalp
8. Name the muscles with nerve supply & action of tongue
9. Digastric triangle
10. Cavernous sinus
11. Blood supply of thyroid gland
12. Lymphatic drainage of tongue
13. Maxillary air sinus
14. Facial artery
15. Nerve supply of lacrimal gland
16. Atlanto-axial joints
17. Hyoglossus muscle
18. Vocal cord

19.Parotid duct

20.Venous drainage of face

21.Middle meatus of nose

22.Carotid sheath

23.Extraocular muscles

24.Palatine tonsil

25.Nerve supply of tongue

26.Tympanic membrane

27.Ansacervicalis

28.Ciliary ganglion

29.Otic ganglion

30.Midline structures of neck

31.Subclavian triangle

32.Medial wall of middle ear

33.Tonsil

34.Lacrimal apparatus

35.Middle meningeal artery

36.Buccinator

37.Falxcerebri

38.Lateral wall of nose

39.Ext. jugular vein

40.Sternocleidomastoid

41.Chorda tympani nerve

42.Lateral pterygoid muscle

43.Nasal septum

44.Boundaries of tympanic cavity

45. Thyroid gland
46. Occulomotor nerve
47. Submandibular salivary gland
48. Inferior constrictor muscle
49. External acoustic meatus
50. Dural folds
51. Auditory tube
52. Recurrent laryngeal nerve
53. Levatorpalpebraesuperioris muscle

Brief answers 3 marks

1. Dangerous area of face
2. Pterion
3. Formation and termination of ext jugular vein
4. Suboccipital nerve
5. Structures pierced by parotid duct in order
6. Origin and branches of middle meningeal artery
7. Waldeyer's ring
8. Parotid duct
9. Middle cervical ganglion
10. Fenestra vestibule
11. Epicranial aponeurosis
12. Falxcerebelli
13. Tentorium cerebelli
14. Branches of ext carotid artery

15. Name the components of lacrimal apparatus
16. Name the extraocular muscles of eyeball
17. Boundaries of laryngeal inlet
18. Mention the bones of middle ear cavity
19. Enumerate muscles of palate
20. Features of nasopharynx
21. Boundaries of submental triangle
22. Name unpaired dural venous sinuses
23. Intrinsic muscles of larynx
24. Emissary veins
25. Lacus lacrimalis
26. Lymphatic drainage of face
27. Structures present in lateral wall of cavernous sinus
28. Nerve supply of larynx
29. 4 branches of 1st part of maxillary artery
30. Bones forming nasal septum
31. Pyriform fossa
32. Orbicularis oculi

Neuroanatomy

Long questions 10 marks

1. Describe the **spinal cord** under the following headings- extent with coverings, ext features & enlargements, CS at mid thoracic level, blood supply, applied aspects

2. Classify the **white matter of cerebrum**& describe **internal capsule** under the following headings- parts & relations, constituent fibres, arterial supply, applied anatomy
3. Describe in detail **blood supply of brain**
4. Describe the **cerebellum** as classification, connections, nuclei, blood supply and clinical anatomy
5. Describe the superolateral surface of the cerebral hemisphere under the following headings- sulci and gyri, functional areas and arterial supply
6. Describe the facial nerve under the following headings- origin and termination, course and relation, branches, applied anatomy
7. Describe the internal capsule of brain under the following headings- position, divisions, constituent fibres, blood supply and applied anatomy
1. Give the formation of circle of willis. Draw diagrams of Supero-lateral, medial and inferior surface of cerebrum showing arteries supplying them
8. Describe pituitary gland and its dev.

Short notes 5 marks

2. Part & constituent fibres of INTERNAL CAPSULE
3. Supero-lateral surface of cerebrum
4. Corpus callosum
5. Horns of lateral ventricle
6. Internal capsule
7. Connections of basal ganglia
8. Blood supply of spinal cord
9. Otic ganglion
10. Cerebellar peduncles
11. Interpeduncular fossa

12. Lateral medullary syndrome
13. TS at the level of superior colliculus of midbrain
14. Rhomboid fossa
15. Labelled diagram of Supero-lateral surface of cerebrum indicating major functional areas
16. Draw a well labelled diagram of CS of pons at the level of facial colliculus
17. Circle of Willis
18. Dentate nucleus
19. Corpus striatum
20. Metathalamus
21. 3rd ventricle of brain
22. Section of medulla oblongata at mid olivary level
23. Medial longitudinal fasciculus
24. CS of spinal cord demarcating the tracts at the mid-thoracic level
25. Calcarine sulcus

Brief answers 3 marks

1. Structures lodged in lateral sulcus of cerebrum
2. Ligamentum denticulatum
3. List special somatic afferent nuclei
4. Functional areas of superior temporal gyrus
5. Fourth ventricle
6. Parts of corpus callosum
7. Deep nuclei of cerebellum
8. Substantia nigra
9. Arteries supplying the spinal cord
10. Mention different parts of diencephalon

11. Insula
12. Visual stria
13. Sensory thalamic nuclei

Histology

Short notes 5 marks

1. Histology of cerebral cortex
2. Histology of parotid gland
3. Histology of cornea
4. Histology of pituitary gland
5. Histology of parathyroid gland
6. Histology of oesophagus
7. Microscopic structure of submandibular salivary gland
8. Microscopic structure of ganglion (spinal and sympathetic)
9. Histology of cerebellum
10. Histology of palatine tonsil
11. Microscopic structure of lung
12. Histology of hyaline cartilage
13. Microscopic structure of liver
14. Microscopic structure of adrenal gland
15. Histology of bone
16. Histology of skeletal muscle
17. Microscopic structure of duodenum
18. Microscopic structure of spleen
19. Microscopic structure of appendix

20. Microscopic anatomy of fundus of stomach
21. Microscopic structure of ovary
22. Microscopic structure of kidney
23. Microscopic structure of testis
24. Histology of skin

Brief answers 3 marks

1. Demilunes
2. Simple squamous epithelium
3. Histology of retina
4. Histology of skeletal muscle
5. Draw and label histology of trachea
6. Hassal's corpuscles

Embryology

Long questions 10 marks

1. Describe in detail congenital anomalies of heart

Short notes 5 marks

1. Dev of atria
2. Dev of lung
3. Dev of tongue
4. Dev of interatrial septum
5. Dev of face *and its anomalies*
6. Dev of thyroid gland

7. Derivatives if 1st branchial arch
8. Derivatives of 2nd pharyngeal arch
9. Fate of aortic arches
10. Amnion
11. Dev of tonsil
12. Dev of neural tube
13. Derivatives of 3rd and 4th pouch
14. Dev of palate
15. Neural tube
16. Dev of cerebellum
17. Primitive streak
18. In vitro fertilization
19. Descent of testis
20. Notochord
21. Rotation of gut
22. Somites
23. Yolk sac
24. Dev of kidney
25. Corpus luteum
26. Midgut rotation
27. Dev of pancreas
28. Meckel's diverticulum
29. Congenital anomalies of kidney
30. Paramesonephric duct
31. Spermatogenesis
32. Dev of urinary bladder

33. Menstrual cycle
34. Dev of diaphragm
35. Formation of blastocyst

Brief answers 3 marks

1. Derivatives of 3rd aortic arch
2. 2nd pharyngeal arch
3. Mention 4 features of Tetralogy of Fallot
4. Dev of pituitary gland
5. Congenital anomalies of ventricles of heart
6. Derivatives of 2nd pharyngeal arch
7. Bones derived from 1st pharyngeal arch
8. 4 derivatives of ectoderm
9. Ligamentum arteriosum

Genetics

Long questions 10 marks

Short notes 5 marks

1. Klinefelter's syndrome
2. Karyotyping of chromosomes
3. Turner's syndrome
4. Sex linked inheritance

5. Trisomy 21

Brief answers 3 marks

1. Down's syndrome
2. Barr body
3. Types of chromosome

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Velammal Medical College Hospital and Research Institute

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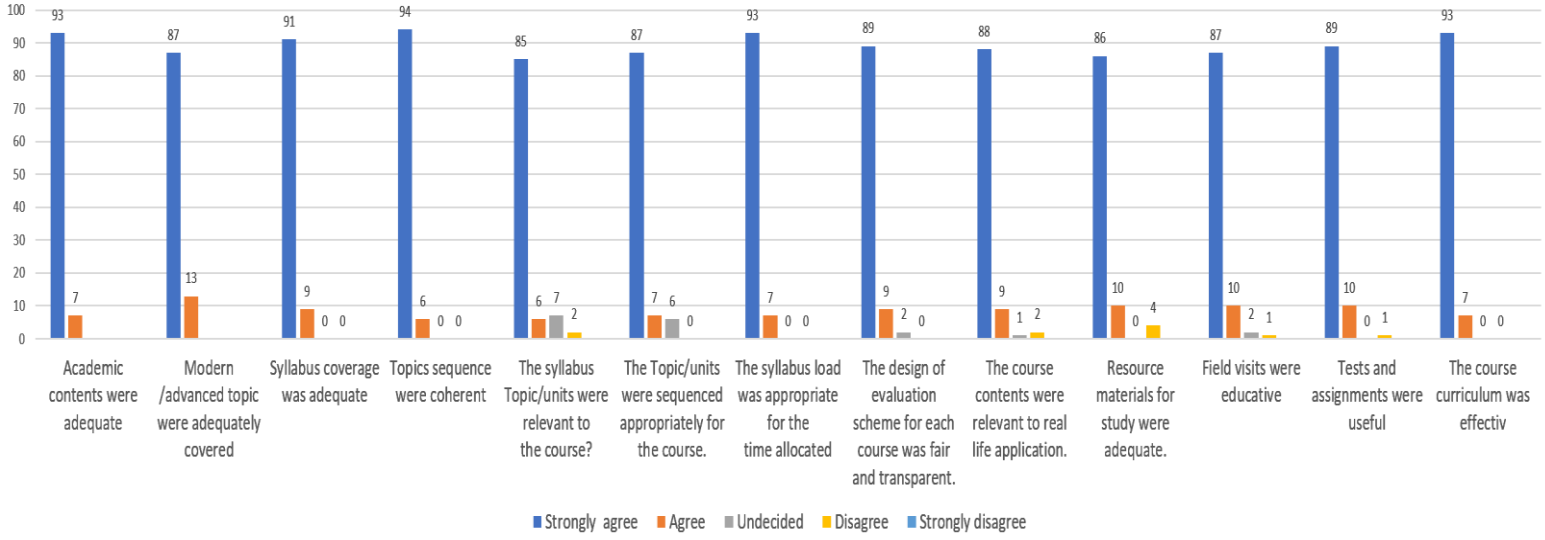
MBBS : First year Batch - 2014 2017-18

Response - 120/150



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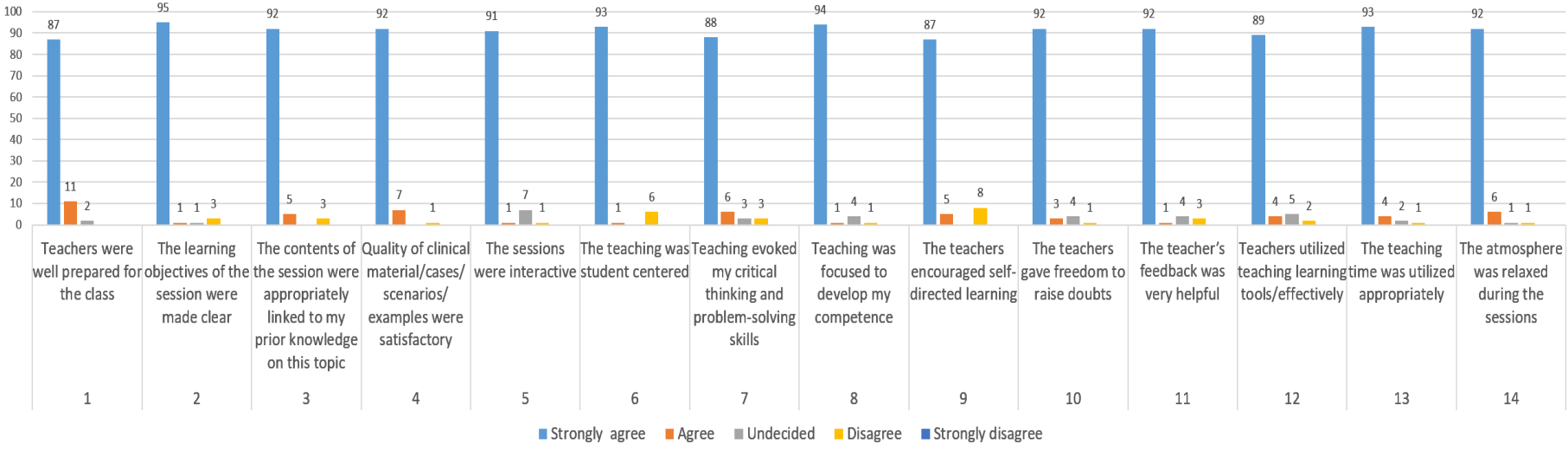

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Sl. No	Name of Student
1.	Aadit Krishna S
2.	Aarira Krishnan
3.	Adlin Trinita A
4.	Aishwarya V
5.	Ajay S
6.	Ajay Shankar V S
7.	Akash B S
8.	Akshita Singh
9.	Akshitha Meenakshi V
10.	Ameya Venkatesh
11.	Amina Marwa Sabreen
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91.	Sathya Prasath K M

Prof. T. THIRUNAVUKKARASU, M.D.,D.A.,
Dean
Velammal Medical College Hospital
and Research Institute
"Velammal Village"
Madurai-Tuticorin Ring Road
Anuppanadi, Madurai-625 009, T.N.