

पाटन स्वास्थ्य विज्ञान प्रतिष्ठान, सेवा आयोग
प्राज्ञिक सेवा, शरिर रचना समूह, सहायक प्राध्यापक पद, नवौं ९(ख) तहको
खुला र आन्तरिक प्रतियोगितात्मक परीक्षाको पाठ्यक्रम
एवं परीक्षायोजना

यस पाठ्यक्रमयोजनालाई दुई चरणमा विभाजनगरिएको छ :

प्रथम चरण :- लिखित परीक्षा(Written Examination)

पूर्णाङ्क :- २००

द्वितीय चरण :-अन्तर्वार्ता (Interview)

पूर्णाङ्क :- ३०

प्रथम चरण(First Phase) :लिखित परीक्षा योजना(Written Examination Scheme)

Paper	Subject		Marks	Full Marks	Pass Marks	No. Questions & Weightage		Time Allowed
I	General Subject	Part I: Management, General Health Issues, Academic Research and Teaching-Learning Practices	50	100	40	10 × 5 = 50 (Subjective)	1.30 hrs	2.15 hrs
		Part II: Technical Subject (Relevant Subject)	50			50 × 1 = 50 (Objective Multiple Choice)	45 min	
II	Technical Subject (Relevant Subject)			100	40	7 × 10 = 70 (Long answer) 2 × 15 = 30 (Critical Analysis)		3.00 hrs
द्वितीय चरण(Second Phase)								
	Interview			30		Oral		

द्रष्टव्य :

- लिखित परीक्षाको माध्यमभाषा नेपाली वा अंग्रेजी अथवा नेपाली र अंग्रेजी दुवै हुन सक्नेछ ।
- प्रतिष्ठानको प्राज्ञिक सेवा अन्तर्गतका सबै समूह/सवै उपसमूहहरूको लागि प्रथमपत्रको Part I को पाठ्यक्रमको विषयवस्तु एउटै हुनेछ । तर प्रथमपत्रको Part II र द्वितीयपत्र Technical Subject को पाठ्यक्रम समूह/उपसमूह अनुरूप फरक फरक हुनेछ ।
- प्रथम र द्वितीयपत्रको लिखित परीक्षा छुट्टाछुट्टै हुनेछ । प्रथमपत्रको Part II र द्वितीयपत्रको विषयवस्तु एउटै समूहको हकमा समान हुनेछ । परीक्षामा सोधिने प्रश्नसंख्या र अङ्कभार यथासम्भव सम्बन्धित पत्र, विषयमा दिईए अनुसार हुनेछ ।
- वस्तुगत बहुवैकल्पिक (Multiple Choice) प्रश्नहरूको गलत उत्तर दिएमा प्रत्येक गलत उत्तर बापत २० प्रतिशत अङ्क कट्टा गरिनेछ । तर उत्तर नदिएमा त्यस बापत अङ्क दिइने छैन र अङ्क कट्टा पनि गरिने छैन ।
- वस्तुगत बहुवैकल्पिक हुने परीक्षामा परीक्षार्थीले उत्तर लेख्दा अंग्रेजी ठूलो अक्षर (Capital letter) A,B,C,D मा लेख्नुपर्नेछ । सानो अक्षर (Small letter) a, b, c, d लेखेको वा अन्य कुनै सङ्केत गरेको भए सबै उत्तरपुस्तिका रद्द हुनेछ ।
- बहुवैकल्पिक प्रश्नहरू हुने परीक्षामा कुनै प्रकारको क्याल्कुलेटर (Calculator) प्रयोग गर्न पाइने छैन ।
- विषयगत प्रश्नहरूको हकमा एउटै प्रश्नका दुई वा दुई भन्दा बढी भाग (Two or more parts of a single question) वा एउटा प्रश्न अन्तर्गत दुई वा बढी टिप्पणीहरू (Short notes) सोध्न सकिने छ ।
- विषयगत प्रश्नमा प्रत्येक पत्र/विषयका प्रत्येक खण्डका लागि छुट्टाछुट्टै उत्तरपुस्तिकाहरू हुनेछन् । परीक्षार्थीले प्रत्येक खण्डका प्रश्नहरूको उत्तर सोही खण्डका उत्तरपुस्तिकामा लेख्नुपर्नेछ ।

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९. यस पाठ्यक्रम योजना अन्तर्गतका पत्र/विषयका विषयवस्तुमा जेसुकै लेखिएको भएतापनि पाठ्यक्रममा परेका कानून, ऐन, नियम, विनियम तथा नीतिहरू परीक्षाको मिति भन्दा ३ महिना अगाडि (संशोधन भएका वा संशोधन भई हटाईएका वा थप गरी संशोधन भई) कायम रहेकालाई यस पाठ्यक्रममा परेको सम्झनु पर्दछ।
१०. प्रथम चरणको परीक्षाबाट छनौट भएका उम्मेदवारहरूलाई मात्र द्वितीय चरणको परीक्षामा सम्मिलित गराइनेछ।
११. पाठ्यक्रम लागु मिति : २०७४/६/२९
१२. पाठ्यक्रम परिमार्जन मिति : २०७९/१२/

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Paper I: General Subject

Part I:

(Management, General Health Issues, Academic Research and Teaching-Learning Practices)

Section (A) - 25 Marks

1. Management

- 1.1. Health care management system in Nepal and other parts of the world
- 1.2. Fundamental principles of healthcare institution and hospital management.
- 1.3. Effective hospital management principles
- 1.4. Purpose of medical and non-medical data and records
- 1.5. Ethics and responsibility of management
- 1.6. Concept of management and its application in health care including hospital
 - 1.7.1 Management: Concept, principles, functions, scope and role, level and skills of manager
 - 1.7.2 Planning: Concept, principles, nature, types, instruments and steps
 - 1.7.3 Leadership: Concept, function, leadership styles, leadership and management
 - 1.7.4 Coordination: Concept, types, techniques of effective coordination
 - 1.7.5 Communication and counselling: Concept, communication processes and barrier to effective communication, techniques for improving communication
 - 1.7.6 Decision making: Importance, types, rational process of decision making, problem solving techniques, improving decision making
 - 1.7.7 Participative management: Concept, advantage and disadvantage, techniques of participation
 - 1.7.8 Time management: Concept, essential factors and strategies for effective time management
 - 1.7.9 Conflict management: Concept, approaches to conflict, levels of conflict, causes of conflict and strategies for conflict management
 - 1.7.10 Stress management: Concept, causes and sources of stress, techniques of stress management
 - 1.7.11 Change management: Concept, sources of organizational change, resistance to change, management of resistance to change
 - 1.7.12 Appreciative inquiry: Concept, basic principle and management
 - 1.7.13 Human resource management: Concept, functions and different aspects
 - 1.7.14 Health manpower recruitment and development
 - 1.7.15 Financial management: Concept, approaches, budget formulation and implementation, Auditing and topics related to fiscal administration

2. General Health Issues

- 2.1. Present constitution of federal republic of Nepal (including health and welfare issues)
- 2.2. Organizational structure of Ministry of Health at national/federal, regional/state, district (if applicable), municipal and village council level
- 2.3. Professional council and related regulations
- 2.4. National Health Policy
- 2.5. Health Service Act and Regulation
- 2.6. Second Long term health plan

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- 2.7. Health Management Information System, forms, indicators, annual reports
- 2.8. Human Development Indices, Sustainable Development Goals
- 2.9. Health volunteers in the national health system, its rationale, use and effectiveness
- 2.10. Local governance and community participation in health service delivery
- 2.11. Health Insurance and financing in health care
- 2.12. Alternative health care system: Ayurveda, homeopathy, Unani, Chinese etc.
- 2.13. Indigenous and traditional faith health and health practices
- 2.14. International Health Agencies: Roles and responsibilities of WHO, UNICEF, UNFPA, Inter-agency relationships, Government-agency coordination: Joint Annual Review meeting
- 2.15. Supervision, types and its usage in health sector
- 2.16. Monitoring and evaluation system in health sector
- 2.17. National Health Training Centre
- 2.18. National and International Disaster Plan, Coordination
- 2.19. Patan Academy of Health Sciences Act, Mission, Goals, Organogram
- 2.20. Scope and function of Patan Academy of Health Sciences executive bodies (senate, executive committee, academic council, faculty board, hospital management committee, subject committee), various other committees

Section (B) - 25 Marks

3. Academic Research

- 3.1 Ethics, Bio-ethics and Professionalism
- 3.2 Human dignity and Human Right
- 3.3 Benefit and Harm
- 3.4 Autonomy and Individual responsibility
- 3.5 Consent and capacity to consent
- 3.6 Privacy and confidentiality
- 3.7 Respect for humans and personal integrity
- 3.8 Non-discrimination and non-stigmatization
- 3.9 Respect for cultural diversity and pluralism
- 3.10 National Health Research Council (NHRC) and its guidelines
- 3.11 Research process: ethical research proposal development, research principles, methods and materials, conclusion/recommendation/lesson learnt, commonly used referencing styles
- 3.12 IRB/IRC forms, types, use, importance; getting IRB/IRC clearance
- 3.13 Ethics on research methodology: sample selection, sample size calculation, ensuring reliability and validity of the instruments as well as methods proposed for health research
- 3.14 Quantitative and Qualitative studies
- 3.15 Data analysis (data visualization, descriptive statistics, inferential statistics with statistical hypotheses and appropriate tools/methods for quantitative studies; theme and code generation, thematic analysis, content analysis, grounded theory for qualitative and triangulation for mixed method studies)
- 3.16 Research ethics on vulnerable and non-vulnerable population

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- 3.17 Research proposal/protocol/publication:
- 3.18 Publication ethics, plagiarism including self-plagiarism

4. Teaching-Learning, Assessment and Evaluation

- 4.1 Lancet Commission Report on Education of Health Professionals
- 4.2 Adult learning: Theories, principles, use, importance and outcomes, Andragogyvs. Pedagogy
- 4.3 Conventional teaching-learning: Didactic lectures, Teacher centred approaches, use and importance
- 4.4 Surface learning, deep learning and metacognition
- 4.5 Integrated teaching: Genesis, use, importance and outcomes
- 4.6 Problem-based learning: Genesis, use, importance and outcomes
- 4.7 SPICES model its use, importance and outcomes
- 4.8 Socialization, self-directed learning, mentoring, role model
- 4.9 Community orientation/community posting, re-orientation of medical education camp, community based learning and community engaged teaching-learning methods/models, use, importance and outcomes
- 4.10 Outcome Based Education (Competency-based Medical/Health Professions Education): Genesis, use, importance and outcomes
- 4.11 Experiential learning, Reflective practice, Feedback and feed-forward, Situated learning, Co-operative learning, Communities of practice
- 4.12 Assessment of students
 - 4.12.1 Blueprinting(Table and specification) : use, importance and outcomes
 - 4.12.2 Bloom's taxonomy of cognitive, psychomotor and affective domains, use and importance
 - 4.12.3 Diagnostic, Formative, Summative and Professional exams
- 4.13 Assessment of knowledge: Selection methods like Multiple Choice Questions, Extended Matching Items and supply methods like Short Answer Question, Problem Based Question, Long Answer Question with or without model answers and marking schemes, unstructured, semi-structured and structured viva-voce examination, advantages and limitations, use and importance, outcomes and its use in quality control
- 4.14 Assessment of performance (in-vitro): Direct observation of skills in the simulated setting, lab, ward etc. with or without checklist, Objective Structured Practical Examination, Objective Structured Clinical Examination, Standardized patients, use and importance, analysis, quality assurance, outcomes and its use in quality control
- 4.15 Assessment of performance (in-vivo): Mini-Clinical Evaluation Exercise (Mini-CEX), Direct Observation of Procedural Skills (DOPS), Case-Based Discussion (CbD), OSATS/ PBA, Multi-Source feedback (360 degree evaluation) use and importance for competency based health professions education, analysis, quality assurance, outcomes and its use in quality control
- 4.16 Assessment of observable behaviours in small groups e.g. Problem Based Learning sessions, Community Based Learning and Education sessions, Clinical clerkship rotations

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- 4.17 Evaluation: Difference between assessment and evaluation, theory of change and its use in health professions education, process and outcome evaluation, qualitative, quantitative and mixed methods used in evaluation of health professions education

Paper I

**Part II: Technical Subject
Section (C) - 25 Marks**

1. General Anatomy

- 1.1 Classification of the bone.
- 1.2 Parts of a long bone.
- 1.3 Different types of epiphysis.
- 1.4 Ossification and different types of ossification centres.
- 1.5 Blood supply of the typical long bone and appraise its significance in osteomyelitis.
- 1.6 Steps of ossification and the significance of law of ossification.
- 1.7 Different types of joints.
- 1.8 Features of a typical synovial joint.
- 1.9 Basic organization of nervous system and its functional significance.
- 1.10 Organization of a spinal nerve and overview of its distribution.

2. General Histology

- 2.1 Principles of routine histological techniques.
- 2.2 Types of Tissues, Epithelium, Connective, Muscle and Nerve Tissue and classification and their functional significance
- 2.3 Features and functional significance of cartilage
- 2.4 Structural organization of bone and its macroscopic and microscopic features

3. Musculoskeletal and Integumentary System

- 3.1 Development of face and associated common birth defects.
- 3.2 Organization, curvatures and postnatal developmental changes of spinal column.
- 3.3 Anatomy of intervertebral articulations and intervertebral discs.
- 3.4 Role of principal group of muscles and ligaments of the spinal column in its stability and movement.
- 3.5 Anatomy of spinal column with common back problems.
- 3.6 Scalp its layers, blood supply, innervations and applied aspects.
- 3.7 Sensory and motor supply of face and consequences of injury to nerves supplying the muscles of facial expression.
- 3.8 Boundaries, subdivisions and contents of anterior and posterior triangle of neck.
- 3.9 Deeper structures in the neck.
- 3.10 Triangles of neck, boundaries and contents.
- 3.11 Disposition of deep cervical fascia and its clinical significance.

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- 3.12 Formation, course, tributaries and applied anatomy of external jugular vein.
 - 3.13 Origin, course and branches of common carotid artery including external carotid artery.
 - 3.14 Formation, course, tributaries and termination of internal jugular vein.
 - 3.15 Anatomy of atlantooccipital and atlantoaxial joints and the movements at these joints.
 - 3.16 Parotid region, Temporal fossa, Infratemporal fossa and Submandibular Region
 - 3.17 Parotid gland and its relation with facial nerve.
 - 3.18 Temporomandibular joint, its movements and the muscles acting up on the joint including their innervation.
 - 3.19 Muscles of mastication and their nerve supply.
 - 3.20 Cranial duramater, its main reflections within the cranial cavity and the arrangement of the dural venous sinuses.
 - 3.21 Relationship between dural venous sinuses and extracranial veins in spreading intracranial infection.
 - 3.22 Boundaries and contents of orbit.
 - 3.23 Extraocular muscles its action and nerve supply
 - 3.24 Arrangement of the lymphatic drainage of the head and neck, the major groups of lymph nodes and the potential routes for the spread of infection and malignant disease.
 - 3.25 Surface landmark and surface anatomy of major structures in head and neck.
 - 3.26 Skull and individual bones of skull.
 - 3.27 Sutural joints and fontanelles of the fetal skull.
 - 3.28 Major foramina in a skull and list the structures passing through it.
 - 3.29 Types and features of cervical vertebra.
 - 3.30 Position and features of hyoid bone.
 - 3.31 Radiological features of head on standard diagnostic images
 - 3.32 Normal developmental process of skin and its appendages
 - 3.33 Histological features of skin and hair follicle.
 - 3.34 Suprahyoid and infrahyoid group of muscles, their actions and innervations.
 - 3.35 Cervical plexus and their distribution.
 - 3.36 Cervical lymph nodes and their area of drainage.
 - 3.37 Triangles of neck.
- 4. Upper Limb**
- 4.1 Anatomical landmarks of the clavicle, scapula, humerus, radius and ulna.
 - 4.2 Bones in an articulated hand.
 - 4.3 Regions, fascia and fascial compartment in upper limb.
 - 4.4 Origin, course and distribution of the major arteries of upper limb.
 - 4.5 Formation, courses and tributaries of the main veins of the upper limb.
 - 4.6 Formation of the brachial plexus
 - 4.7 Origin, course and distribution of the axillary, radial, musculocutaneous, median and ulnar nerves in the arm, forearm, wrist and hand.

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- 4.8 Muscles and muscle groups that these nerves supply as well as their sensory distribution.
 - 4.9 Axillary, musculocutaneous, radial, median and ulnar nerves injury.
 - 4.10 Boundaries of axilla and list its contents.
 - 4.11 Axillary lymph nodes including their area of drainage and applied aspect.
 - 4.12 Shoulder joint, factors maintaining its stability, movements at this joint and muscles responsible for these movements with their attachment and nerve supply.
 - 4.13 Elbow joint, movements at this joint and muscles responsible for these movements with their main attachment and nerve supply.
 - 4.14 Radioulnar joint and movements at this joint and name the muscles responsible for these movements including their main attachments and nerve supply.
 - 4.15 Wrist joint and movements at this joint and name the muscles group responsible for these movements.
 - 4.16 Attachment and function of retinacula at wrist.
 - 4.17 Carpal tunnel and the cause and manifestation of carpal tunnel syndrome.
 - 4.18 Major surface landmark in upper limb.
 - 4.19 Surface anatomy of major vessels and nerves of upper limb.
 - 4.20 Radiological features of upper limb on standard diagnostic images.
 - 4.21 Intrinsic muscles of hand.
- 5. Lower Limb**
- 5.1 Major features and surface landmarks of bones of lower limb.
 - 5.2 Regions, fascia and fascial compartment in lower limb.
 - 5.3 Origin, course and branches of the major arteries that supply the hip, gluteal region, thigh, leg, ankle and foot and their functional significance
 - 5.4 Formation, course and tributaries of major veins of lower limb.
 - 5.5 Role of the perforator vein connections between the superficial and deep veins and the function of the 'muscle pump' for venous return to the heart.
 - 5.6 Formation of lumbar and lumbosacral plexus and its major branches.
 - 5.7 Origin, course and function of the sciatic, femoral, obturator, common peroneal and tibial nerves, sural and saphenous nerves and summarize the muscles and muscle groups that each supply as well as their sensory distribution.
 - 5.8 Femoral triangle and the anatomical relationships of the femoral nerve, artery, vein and lymph nodes to each other in the triangle, femoral herniation.
 - 5.9 Gluteal region.
 - 5.10 Hip joint, its movements and the muscles responsible for these movements with their innervation and main attachments.
 - 5.11 Boundaries and contents of the popliteal fossa.
 - 5.12 Knee joint and movements at knee joint and the muscles responsible for these movements with their innervation and main attachments.
 - 5.13 Menisci, ligaments, the locking and unlocking mechanism of knee joint.

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- 5.14 Bursae around knee joint and its applied aspect.
 - 5.15 Ankle joint and movements of it, the muscles responsible for these movements with their innervation and main attachments.
 - 5.16 Movements of inversion and eversion at the subtalar joint, the muscles responsible, their innervation and main attachments.
 - 5.17 Attachment of retinacula around the ankle joint.
 - 5.18 Arches of the foot and the bony, ligamentous and muscular factors that maintain them.
 - 5.19 Lymphatic drainage of the lower limb.
 - 5.20 Major radiological features of lower limb on standard diagnostic images.
- 6. Lymphatic System**
- 6.1 Lymphoid organs (central and peripheral) with examples.
 - 6.2 Location, position, gross features, relation, ligaments and blood supply of spleen relating with common diseases.
 - 6.3 Histological features of spleen.
 - 6.4 Histological features of thymus and location and age-related changes of thymus.
 - 6.5 Types of tonsil, histological features of palatine tonsil
 - 6.6 Waldeyer's ring.
 - 6.7 Histological features of lymph node.
 - 6.8 MALT, BALT, GALT
- 7. General Embryology**
- 7.1 Gametogenesis--spermatogenesis and oogenesis
 - 7.2 Process of ovulation.
 - 7.3 Fertilization
 - 7.4 Corpus leutum.
 - 7.5 Site of normal implantation, ectopic pregnancy
 - 7.6 Bilaminar germ discs.
 - 7.7 Uteroplacental circulation.
 - 7.8 Gastrulation-trilaminar germ disc
 - 7.9 Derivatives of different germ layers.
 - 7.10 Normal development of notochord formation and neural tube formation.
 - 7.11 Division of mesoderm and its derivatives.
 - 7.12 Changes in embryo and fetus at different stages of development.
 - 7.13 Placenta, formation and its components
 - 7.14 Fetal membrane.
 - 7.15 Twins pregnancy
 - 7.16 Teratogenesis

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Section (D) - 25 Marks

8. Medical Genetics

- 8.1 Importance of genetics in medicine.
- 8.2 Different mode of inheritance of genetic diseases and appraise the chance of inheritance in offspring.
- 8.3 Chromosome and its structure, various types of chromosomal abnormalities
- 8.4 Phenotypic and karyotypic features of common chromosomal disorders.
- 8.5 Karyogram.
- 8.6 Pedigree analysis.
- 8.7 Indications for chromosomal analysis.
- 8.8 Prenatal diagnostic modalities, its advantage and limitations/disadvantages.
- 8.9 Genetic counseling.
- 8.10 Genomic imprinting

9. Respiratory System

- 9.1 Pharyngeal apparatus and its derivatives.
- 9.2 Developmental sources for various parts of respiratory system, developmental basis for the various congenital anomalies related with respiratory system.
- 9.3 Developmental sources of diaphragm and pleura.
- 9.4 Nasal cavity- medial and lateral wall, nasal septum, its blood supply.
- 9.5 Paranasal sinuses and their relationships to the nasal cavities and sites of drainage on its lateral wall with applied aspect.
- 9.6 Larynx including its skeletal components and their interrelationship.
- 9.7 Functional significance of intrinsic muscles of larynx in relation to regulating laryngeal inlet, controlling vocal cord position and tension and phonation.
- 9.8 Motor and sensory nerve supply of the larynx and the functional consequences of injury to them.
- 9.9 Trachea and tracheobronchial tree.
- 9.10 Lung and the structures in the hilum including mediastinal relations of each lung.
- 9.11 Blood and nerve supply and lymph drainage of the lungs.
- 9.12 Bronchopulmonary segment and its clinical significance.
- 9.13 Pleura, its innervation and pleural recesses it's the clinical significance.
- 9.14 Diaphragm- attachment, position and movement during respiration, motor and sensory nerve supply
- 9.15 Microscopic structure of parts of respiratory systems.
- 9.16 Thoracic vertebra, ribs and sternum.
- 9.17 Thoracic cage and boundaries of its inlet and outlet.
- 9.18 Muscle involved in respiration.
- 9.19 Intercostals space, intercostals muscles, neurovascular bundle in a typical intercostal space.

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9.20 Surface landmark on thoracic wall.

9.21 Surface markings of pleura and lungs

10. Cardiovascular System

10.1 Formation of heart tube and cardiac loop.

10.2 Developmental process of different parts of heart, the basis for major congenital heart anomalies.

10.3 Derivatives of arches of aorta.

10.4 Developmental sources of inferior venacava, superior venacava and brachiocephalic vein.

10.5 Developmental basis of congenital anomalies of major vessels.

10.6 Embryonic circulation, fetal circulation and changes after birth.

10.7 Heart and its conducting system.

10.8 Origin, course and main branches of the left and right coronary arteries and the functional consequences of their obstruction.

10.9 Coronary dominance.

10.10 Pericardium, its relationship with heart and innervation.

10.11 Histological features of heart, blood vessels and lymphatics.

10.12 Boundaries, subdivision and contents of mediastinum.

10.13 Course of the ascending aorta, the arch of the aorta and the descending thoracic aorta, major branches and the structures they supply.

10.14 Formation, course and relationships of the brachiocephalic veins, superior vena cava and the azygos venous system.

10.15 Course and distribution of the vagus nerve on both the right and left sides of the thorax.

10.16 Origin, course and distribution of the phrenic nerve on both the right and left sides of the thorax.

10.17 Sympathetic trunk.

10.18 Thoracic duct.

10.19 Heart and major blood vessels on standard diagnostic images.

10.20 Surface marking for heart, major great vessels, valves and auscultatory areas.

11. Gastrointestinal and Hepatobiliary System

11.1 Developmental sources of tongue and innervation and common congenital abnormalities.

11.2 Developmental basis of cleft palate.

11.3 Establishment of gut tube.

11.4 Derivatives of foregut, midgut and hindgut.

11.5 Development process of parts of gastrointestinal tract, hepatobiliary organs, pancreas and associated structures and various congenital anomalies.

11.6 Oral cavity in terms of parts and contents.

11.7 Gross features of tongue including its intrinsic and extrinsic muscles and their action and its sensory and motor nerve supply.

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- 11.8 Pharynx - the constrictors and longitudinal muscle of pharyngeal wall, nerve supply of pharynx (Motor & Sensory).
 - 11.9 Esophagus-gross feature, course and major relation.
 - 11.10 Stomach, its position, parts, sphincters, blood supply, nerve supply, lymphatic drainage and key relations to other abdominal organs.
 - 11.11 Duodenum, its parts, position, blood supply and key relations with other abdominal organs and their significance in relation to peptic ulcer disease.
 - 11.12 Small and large intestine, the mesentery
 - 11.13 Appendix-anatomical variations in the position of the appendix
 - 11.14 Sigmoid colon and rectum and their anatomical relationships including peritoneal.
 - 11.15 Anal canal including its innervation, blood supply and lymphatic drainage.
 - 11.16 Pancreas and its relationships to other abdominal organs.
 - 11.17 Liver, the lobes of the liver and their key anatomical relations including peritoneal reflections and other ligaments.
 - 11.18 Portal vein and portocaval anastomosis and their significance in portal hypertension.
 - 11.19 Gall bladder and biliary tree; their relations in the abdomen and the significance of these relations in relation to gall bladder inflammation and biliary stones.
 - 11.20 Histological features of organs of GI system including tongue, hepatobiliary apparatus and pancreas.
 - 11.21 Peritoneum- parietal and visceral peritoneum, lesser and greater sacs, mesenteries and peritoneal 'ligaments'.
 - 11.22 Epiploic foramen and its significance.
 - 11.23 Inguinal canal, its contents in male and female, direct and indirect inguinal hernias.
 - 11.24 Describe the contents of the inguinal canal in both males and females.
 - 11.25 Abdominal region, Anterior abdominal wall.
 - 11.26 Lumbar vertebra.
 - 11.27 Surface landmark on anterior abdominal wall.
 - 11.28 Surface anatomy of viscera of GI tract, hepatobiliary apparatus, pancreas and vessels (abdominal aorta, its major branches, inferior venacava and portal vein).
 - 11.29 GI tract and hepatobiliary apparatus and their features on standard diagnostic images.
- 12. Urinary System**
- 12.1 Developmental sources for various parts of urinary system.
 - 12.2 Developmental basis for the various congenital anomalies related with urinary system.
 - 12.3 Gross features of kidney, ureter, urinary bladder, urethra and their relationships.
 - 12.4 Histological features of organs of urinary system.
 - 12.5 Surface anatomy and radiological features of urinary system on standard diagnostic images.

13. Endocrine, Reproduction and Metabolism

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- 13.1 Developmental sources of different endocrine organs/glands and developmental basis for various congenital anomalies.
 - 13.2 Thyroid gland-the gross features, arterial supply and venous drainage, significance of its relation with laryngeal nerve.
 - 13.3 Parathyroid glands, pituitary gland, suprarenal gland-location and features.
 - 13.4 Microscopic structure of endocrine glands/organs.
 - 13.5 Bony pelvis, pelvic inlet and pelvic outlet; difference between male and female pelvis.
 - 13.6 Pelvic floor and its functional significance.
 - 13.7 Developmental process of male and female reproductive organs with various anomalies.
 - 13.8 Developmental process of external genitalia in male and female with various anomalies.
 - 13.9 Female reproductive organs.
 - 13.9.1 Position and gross features of the ovary, uterine tubes, uterus (including supports of uterus), cervix and vagina and their anatomical relationships, including any peritoneal coverings.
 - 13.9.2 Gross anatomy of breast, its blood supply and lymphatic drainage.
 - 13.9.3 Histological features of ovary, uterine tube, uterus, vagina and breast.
 - 13.10 Male reproductive organs.
 - 13.10.1 Gross anatomy of testis and epididymis.
 - 13.10.2 Arterial supply in relation to torsion, their venous drainage in relation to varicocoele and their lymphatic drainage in relation to tumour spread.
 - 13.10.3 Spermatic cord and vas deferens.
 - 13.10.4 Postate gland, seminal vesicles and their anatomical relations, the changes in prostate gland with age.
 - 13.10.5 Histological features of testes, epididymis, vas deferens, seminal vesicle and prostate gland.
 - 13.11 Perineum including male and female external genitalia.
 - 13.12 Ischiorectal fossa and its applied importance.
 - 13.13 Radiological feature of female reproductive system on standard diagnostic images.
- 14. Nervous System and Special Senses**
- 14.1 Formation of neural tube and the developmental source of the different parts of the brain
 - 14.2 Developmental anomalies related with nervous system.
 - 14.3 Different parts of central nervous system.
 - 14.4 Major sulci (lateral, central, parieto-occipital and calcarine) and illustrate the lobes of cerebral hemisphere with its demarcation.
 - 14.5 Cerebral hemisphere subserving major special function: Motor, Sensory, auditory, visual, speech (Sensory and motor), personality, and intelligence.
 - 14.6 Functional areas of cerebral hemisphere to explain the manifestation of related disorders.
 - 14.7 Cerebral dominance.
 - 14.8 Histological features of cerebral cortex.
 - 14.9 White fibres (commissural, association and projection).
 - 14.10 Corpus callosum, internal capsule.
 - 14.11 Blood supply of the brain and the functional deficit resulted by injury to arteries.

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- 14.12 Thalamus, hypothalamus, Basal ganglia- location, relation, parts, nuclei and important connections.
- 14.13 Brainstem, disposition of cranial nerves nuclei within it and important tracts/fasciculus passing through it.
- 14.14 Cerebellum and its division, deeper nuclei of cerebellum, the important connection in cerebellum, diseases and disorders
- 14.15 Histological features of cerebellum.
- 14.16 Spinal cord and the tracts (ascending and descending tracts with their functional significance). arrangement of nuclei within the grey matter of spinal cord, blood supply of the spinal cord and its applied aspects.
- 14.17 Manifestation of spinal cord injuries/diseases.
- 14.18 Ventricles.
- 14.19 Meninges and its relation with brain and spinal cord.
- 14.20 Circulation and drainage of cerebrospinal fluid.
- 14.21 Major features of brain on coronal, horizontal and sagittal sections and on standard diagnostic images.
- 14.22 Functional component, nuclei of origin, course, distribution and functional significance of cranial nerves and their clinical conditions.
- 14.23 Eyeball, development of eye and the basis for retinal detachment of eye.
- 14.24 Visual pathway and clinical conditions.
- 14.25 External ear and external auditory meatus.
- 14.26 Tympanic membrane and applied aspect.
- 14.27 Middle ear, internal ear.
- 14.28 Auditory pathway and related clinical conditions.
- 14.29 Microscopic structure of cornea and retina.
- 14.30 Microscopic structure of organ of Corti.

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