

**पाटन स्वास्थ्य विज्ञान प्रतिष्ठान**  
**सेवा आयोग**  
प्राविधिक सेवा, प्राज्ञिक समूह, इन्टरनल मेडिसिन उपसमूह, विभिन्न पदहरू (लेक्चरर/उप-प्राध्यापक/सह-  
प्राध्यापक/प्राध्यापक) को खुल्ला र आन्तरिक प्रतियोगितात्मक परिक्षाको पाठ्यक्रम

**पाठ्यक्रमको रूपरेखा :-** यस पाठ्यक्रमको आधारमा निम्नानुसार चरणमा परीक्षा लिइनेछ ।

प्रथम चरण :- लिखित परीक्षा

पूर्णाङ्क :- २००

द्वितीय चरण :- अन्तर्वार्ता

पूर्णाङ्क :- ३०

प्रथम चरण :- लिखित परीक्षा (Written Examination)					Full Marks:- 200	
पत्र	विषय	पूर्णाङ्क	उत्तीर्णाङ्क	परीक्षा प्रणाली	प्रश्नसंख्या X अङ्क	समय
प्रथम	General Health Issues and Service Specific	१००	४०	वस्तुगत: बहुवैकल्पिक प्रश्न (Objective: Multiple Choice)	१०० प्रश्न x १अङ्क= १००	१ घण्टा ३० मिनेट
द्वितीय		१००	४०	विषयगत (Subjective)	६ प्रश्न x १० अङ्क = ६० (Long Answer) २ प्रश्न x २० अङ्क = ४० (Critical Analysis & Problem Solving)	३ घण्टा
द्वितीय चरण :- अन्तर्वार्ता (Interview)					Full Marks:- 30	
व्यक्तिगत अन्तर्वार्ता		३०		मौखिक (Oral)		

**द्रष्टव्य :**

- लिखित परीक्षाको माध्यम भाषा अंग्रेजी हुनेछ ।
- लिखित परीक्षाको उत्तीर्णाङ्क ४० प्रतिशत हुनेछ ।
- पाठ्यक्रमको प्रथम तथा द्वितीय पत्रको विषयवस्तु एउटै हुनेछ ।
- प्रथम पत्र र द्वितीय पत्रको लिखित परीक्षा छुट्टाछुट्टै हुनेछ ।
- प्रथम पत्रमा **Part (C) Service Specific Technical Subject** बाट मात्र यथासम्भव पाठ्यक्रममा भएका सबै पाठ्यांशहरूबाट निम्नानुसार प्रश्नहरू सोधिनेछ ।

Part (C) Service Specific Technical Subject	Weightage
Unit Contents	
1. Anatomy	
1.1 Neuro- Anatomy	2
1.2 Pulmonology	2
1.3 Cardiovascular system	2
1.4 Gastrointestinal tract	2

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1.5 Kidney and urinary tract	2
1.6 Endocrinal organs	2
2. Physiology	12
3. Pathology	10
4. Clinical Pharmacology	18
5. Principles and Practice of Internal Medicine	30
6. Recent Advances in Internal Medicine and Emergencies	16

६. द्वितीय पत्रमा यथासम्भव निम्नानुसार प्रश्नहरू सोधिनेछ ।

Part	Weightage
(A) General Health Issues	30
(B) Service Specific General Subject	20
(C) Service Specific Technical Subject	50

७. द्वितीय पत्र/विषयका Part A, Part B र Part C को उत्तरपुस्तिकाहरू छुट्टाछुट्टै दिन सकिने छ । यदि उत्तरपुस्तिकाहरू छुट्टाछुट्टै दिएमा परिक्षार्थीले प्रत्येक भाग (Part) का प्रश्नहरूको उत्तर सोही भागको उत्तरपुस्तिकामा लेख्नुपर्नेछ ।
८. यस पाठ्यक्रम योजना अन्तर्गतका पत्र/विषयका विषयवस्तुमा जेसुकै लेखिएको भए तापनि पाठ्यक्रममा परेका कानून, ऐन, नियम तथा नीतिहरू परीक्षाको मिति भन्दा ३ महिना अगाडि (संशोधन भएका वा संशोधन भई हटाईएका वा थप गरी संशोधन भई) कायम रहेकालाई यस पाठ्यक्रममा परेको सम्भन्नु पर्दछ ।
९. प्रथम चरणको लिखित परीक्षाबाट छनौट भएका उम्मेदवारहरू मात्र द्वितीय चरणको अन्तर्वार्तामा सम्मिलित हुन पाउनेछन् ।
१०. पाठ्यक्रम लागू मिति :- २०७०/१२/२९

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**Paper I & II: - General Health Issues and Service Specific**

**Part A: - General Health Issues**

1. Present Constitution of Nepal (Health and Welfare issues)
2. Existing National Health Policy
3. Second long term health plan (1997-2017)
4. Health sector in present periodic plan
5. Prevailing health related Acts and Regulations
  - 5.1 Health Service Act
  - 5.2 Health Service Regulation
  - 5.3 Human Organ Transplant Act
  - 5.4 Kidney Transplant Regulation
  - 5.5 Nepal Medical Council Act
  - 5.6 Consumers Protection Act
6. International health agencies: Role and responsibilities of WHO, UNICEF, UNFPA and interagency relationships
7. Health and Human Right including Women's Right, Children's Right, Professional's Right, Client Right and Informed consent
8. Gender issues and health
9. Organization structure of Ministry of Health
10. Local governance and decentralization in health
11. Health institution development and management issues
12. Health manpower recruitment and development issues
13. Continuing medical education
14. National health training system
15. Indigenous & traditional faith healing & health practices
16. Supervision, types and its usage in Health Sector
17. Monitoring and Evaluation System in Health
18. Health Management Information System
19. Health insurance and financing in Health Care

**Part B: - Service Specific General Subject**

1. Institutional management
2. Organization of faculty/ department
3. Financial planning
4. Principles of Medical Ethics and Medical Informatics
5. Evidence Based Medicine / Critical Appraisal of Scientific Literature
6. Principles of Research Methodology and Scientific Writing
7. Principles of Medical Education
8. Principle of Communication and Patient Counseling

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9. Patient Safety
10. Breaking Bad News
11. Medical Audit
12. Epidemiology and Principle of Prevention and Control of Non-communicable Diseases
13. Information technology, Tele medicine etc.
14. Clinical presentation based teaching

**Part C: - Service Specific Technical Subject**

**1. Anatomy**

**1.1 Neuro- Anatomy**

- 1.1.1 Neuron and its structure
- 1.1.2 Supportive cell type structure, cellular and myelin sheaths
- 1.1.3 Synapsis, neuro-effective junctions and receptors
- 1.1.4 Cerebrum: morphology, cerebral cortex, cortical neurons, cortical layers
- 1.1.5 Motor system: structure, corticospinal, rubrospinal, vestibulospinal and reticulospinal tracts
- 1.1.6 Basal ganglia: structure
- 1.1.7 Cerebellum: morphology, cellular structure and organization
- 1.1.8 Brain stem: general organization
- 1.1.9 Spinal cord and ganglia: morphology, motor and sensory organization in the spinal cord
- 1.1.10 Anatomy of neuro-muscular system
  - 1.1.10.1 LMN, structuring of voluntary muscles, motor units, types of muscle fibres
  - 1.1.10.2 Muscle spindles and other muscles & tendon receptors
- 1.1.11 Sensory system
- 1.1.12 Reflex pathways: involving cranial nerves, and limb and trunk
- 1.1.13 Cranial nerves and special senses: pathways and structure of special sense organs
- 1.1.14 Anatomy of ventricular system and CSF production
- 1.1.15 Anatomy of meninges
- 1.1.16 Autonomic nervous system
- 1.1.17 Arterial and venous cerebral circulation
- 1.1.18 Blood brain barrier

**1.2 Pulmonology**

- 1.2.1 Gross anatomy of upper and lower respiratory tracts, lungs with lobes and fissures with surface marking
- 1.2.2 Concept of bronchopulmonary segments and lobule or acinus supplied by a terminal bronchiole
- 1.2.3 Histology of alveolar lining cells

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- 1.2.4 Pulmonary vascular bed
- 1.2.5 Pleura and pleural space, functions and histology
- 1.2.6 Mediastinum and their structures
- 1.2.7 Thoracic cage and primary and secondary muscles of respiration
- 1.2.8 The diaphragm its attachments, nerve supply and function
- 1.2.9 Lymphatic drainage of lungs and pleura
- 1.2.10 Innervation of the lungs.
- 1.2.11 Thoracic receptors.
- 1.3 **Cardiovascular system**
  - 1.3.1 Gross anatomy of the heart and circulatory system
  - 1.3.2 Histology of the cardiac muscles
  - 1.3.3 Embryology of the heart and circulation
  - 1.3.4 Coronary and pulmonary circulation
- 1.4 **Gastrointestinal tract**
  - 1.4.1 Gross anatomy of the gastrointestinal tract at different levels.
  - 1.4.2 Gross anatomy of the hepatobiliary system and pancreas.
  - 1.4.3 Histological aspects of GI tract at different levels.
  - 1.4.4 Blood supply and development aspects of GI tract and hepatobiliary system
- 1.5 **Kidney and urinary tract**
  - 1.5.1 Gross anatomy of the kidney and urinary tract
  - 1.5.2 Structure of nephron and function at different level
  - 1.5.3 Development of kidney and urinary tract
  - 1.5.4 Renal circulation
- 1.6 **Endocrinal organs**
  - 1.6.1 Gross anatomy of different endocrinal organs and their development
  - 1.6.2 Histology of different endocrinal organs
2. **Physiology**
  - 2.1 Homeostatic behaviors of different fluid compartment in the body and implications during common clinical situations of burn, blood loss diarrhea, vomiting, etc.
  - 2.2 Role of pH in normal and in abnormal conditions e.g. diarrhea, vomiting, airway obstruction, medication, etc.
  - 2.3 Functions of micro/macromolecular, organelles and other structures of the cell
  - 2.4 Nutritional requirements of normal people (different ages, male, female) and ill patients of all categories with their modality of supplement
  - 2.5 Mechanisms of metabolic response to trauma and infection
  - 2.6 Function of hemopoietic / R.E. system
  - 2.7 Blood groups, methods of transfusion of blood & blood products & their hazards
  - 2.8 Mechanism of haemostasis, fibrinolysis & methods to control haemorrhage

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- 2.9 Types of excitable tissues and methods of recording their activity e.g. EMG, EEG, ECG, etc.
- 2.10 Cellular communication, chemical/ neuronal/ electrical/ synaptic transmission
- 2.11 Autonomic nervous system
- 2.12 Neurotransmitters, their synthesis and metabolism
- 2.13 Drugs affecting neurotransmitter activity
- 2.14 Cardiac and smooth muscles
- 2.15 Calcium metabolism
- 2.16 Pain and the mechanism of pain
- 2.17 Physiology of consciousness and sleep mechanism
- 2.18 Effect of injury to neurons
- 2.19 Different methods of monitoring of the heart functions
- 2.20 Drugs used for inotropic & chronotropic effects
- 2.21 Mechanism of blood pressure regulation
- 2.22 Physiology of circulation of different organ in the body
- 2.23 Pathophysiology of shock and principle of their management
- 2.24 Capillary exchange
- 2.25 Assess vascular functions
- 2.26 Respiration & cause of breathlessness
- 2.27 Measure blood flow
- 2.28 Measure / assess blood gas
- 2.29 Mechanism of respiratory control
- 2.30 Mechanism of transport
- 2.31 Use of oxygen as therapy
- 2.32 Mechanism of absorption from gut and physiology of gastrointestinal motility
- 2.33 Composition of GI and hepatobiliary secretions and methods for their assessment
- 2.34 Normal functions of the liver
- 2.35 Formation of urine
- 2.36 Mechanism of osmoregulation
- 2.37 Normal thermoregulation
- 2.38 Mechanism of hormone synthesis, secretion, metabolism

**3. Pathology**

- 3.1 Concept of cell injury, different types of degeneration & trauma
- 3.2 Principles of inflammation and the results of various types of inflammation
- 3.3 Acute and chronic inflammation
- 3.4 Tissue regeneration, wound healing and healing process
- 3.5 Various types of disorder of growth
- 3.6 Principles of neoplasia
- 3.7 Benign and malignant tumor

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- 3.8 Mechanism of thrombosis, and embolism and their effects
- 3.9 Ischemia & infarction
- 3.10 Mechanism of blood clotting and different types of bleeding disorders
- 3.11 Principle of blood grouping system & complications of blood transfusion
- 3.12 Principle of shock
- 3.13 Principle of genetics and apply its concept in hereditary diseases
- 3.14 Principle of immune response
- 3.15 Humoral and cell mediated immunity
- 3.16 Principle of organ transplantation and causes of its rejection
- 3.17 Principle of Host Parasite relationship
- 3.18 Different types of micro-organism (Bacteria, Fungus, Parasite, and Virus)
- 3.19 Pathogenic and non-pathogenic micro-organisms
- 3.20 Principle of asepsis & antisepsis, sterilization and disinfection
- 3.21 Principle of antibiotic and chemotherapy
- 3.22 Microbes that cause wound infection.
- 3.23 Principle of Hospital infection (Nosocomial infection)

**4. Clinical Pharmacology**

**4.1 General clinical pharmacology**

- 4.1.1 Pharmacokinetics, pharmacodynamics, adverse drug reactions, drug interactions, drug use in childhood, pregnancy, lactation, and old age
- 4.1.2 Clinical trials
- 4.1.3 Rational drug use

**4.2 Neurosensory and musculoskeletal systems**

- 4.2.1 Parasympathomimetics and parasympatholytics, adrenergic and antiadrenergic drugs, narcotic and non-narcotic analgesics, non-steroidal anti-inflammatory drugs, alcohol, sedative/hypnotics, anti-parkinsonism drugs, anesthetics (general and local), appetite suppressants
- 4.2.2 Drugs for psychiatric disorder, gout and rheumatoid arthritis, vertigo, and eye, ENT, and skin diseases

**4.3 Cardiovascular system**

- 4.3.1 Drugs for the treatment of heart failure, cardiac arrhythmias, angina pectoris, hypertension, shock, thromboembolic disorders, myocardial infarction, anemia
- 4.3.2 Hemostatics, anti-coagulants, and lipid-lowering drugs

**4.4 Gastrointestinal system**

- 4.4.1 Drugs, for peptic ulcer, diarrhoea, constipation.
- 4.4.2 Antispasmodics, antiemetics.

**4.5 Respiratory system**

- 4.5.1 Drugs for bronchial asthma

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4.5.2 Antihistamines and other antiallergic agents

4.5.3 Cough preparation, nasal decongestants, and respiratory stimulants

4.6 **Reproductive/Endocrine systems**

4.6.1 Antidiabetics, thyroid and antithyroid drugs, corticosteroids, sex hormones and antagonists, hypothalamic and pituitary hormones

4.6.2 Drugs used in labor and puerperium

4.7 **Renal/Electrolyte system**

4.7.1 Drugs for edema, and fluid/ electrolyte and acid/base disturbances

4.8 **Infections**

4.8.1 General principle of chemotherapy

4.8.2 Antibacterial, antiprotozoal, anthelmintic, antifungal, and antiviral drugs

4.9 **Micellaneous drugs**

4.9.1 Drugs for malignant diseases and immunosuppression

4.9.2 Vaccines

4.9.3 Vitamins and minerals

4.9.4 Antidotes

**5. Principles and Practice of Internal Medicine**

5.1 **Gastroenterology**

5.1.1 Acid peptic diseases

5.1.2 Gastrointestinal bleeding: upper (non variceal/variceal) and lower

5.1.3 Gastro oesophageal reflux disease (GERD)

5.1.4 Dysphagia in relation to malignancy and achalasia

5.1.5 Malabsorption syndrome

5.1.6 IBD: ulcerative colitis and Crohn's disease

5.1.7 Diverticular diseases

5.1.8 Irritable bowel syndrome

5.1.9 Acute abdomen

5.1.10 Ascites

5.1.11 Liver disorders

5.1.11.1 Hepatitis: acute and chronic

5.1.11.2 Cirrhosis with special reference

5.1.11.2.1 Hepatic cellular cancer

5.1.11.2.2 Jaundice: obstructive and non obstructive

5.1.11.3 Liver failure: acute and chronic

5.1.12 Pancreas

5.1.12.1 Acute, recurrent & chronic pancreatitis

5.1.12.2 Pancreatic tumor (exocrine & endocrine)

5.1.12.3 Cystic fibrosis & other childhood disorder of the pancreas

5.1.12.4 Hereditary pancreatitis



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#### 5.1.12.5 Pancreatic transplantation

### 5.2 Respiratory Medicine

5.2.1 Anatomy and applied physiology of the respiratory system

5.2.2 Understanding of basic pathophysiology and be able to manage the disease processes mentioned below considering the relevant differential diagnosis:

5.2.2.1 Pneumonias

5.2.2.2 Lung abscess

5.2.2.3 Tuberculosis

5.2.2.4 Fungal infections

5.2.2.5 Bronchial asthma

5.2.2.6 Chronic bronchitis, emphysema and cor-pulmonale:

5.2.2.7 Cystic fibrosis

5.2.2.8 Pulmonary eosinophilia

5.2.2.9 Bronchiectasis (including its postural drainage management)

5.2.2.10 Pulmonary oedema (cardiogenic and non-cardiogenic including ARDS)

5.2.2.11 Interstitial lung disease (including fibrosing alveolitis, extrinsic alveolitics, lung fibrosis, sarcoidosis and pneumoconiosis)

5.2.2.12 Carcinoma lung and other neoplasms

5.2.2.13 Mediastinal masses

5.2.2.14 Pleural diseases (e.g. dry pleurisy, pleural effusion, empyema):

5.2.2.15 Pneumothorax

5.2.2.16 Sleep apnoea syndrome

5.2.2.17 Acute and chronic respiratory failure

### 5.3 Hematology

5.3.1 Physiology and pathophysiology of blood cell formation and haemostasis

5.3.2 Pathophysiology, causes and management of :

5.3.2.1 Anaemia: iron deficiency (with iron metabolism), megaloblastic, haemolytic anaemia and aplastic anaemia

5.3.2.2 Haemoglobinopathy and Polycythemia

5.3.2.3 Leukaemia: myeloid (acute and chronic) and lymphoid (acute and chronic)

5.3.2.4 Myeloproliferative diseases

5.3.2.4.1 PV (Polycythemia Vera)

5.3.2.4.2 Myelofibrosis

5.3.2.4.3 Essential thrombocytosis

5.3.2.5 Bleeding Disorders

5.3.2.6 Platelet Disorders

5.3.2.7 Lymphomas: Hodgkin's and Non Hodgkin

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5.3.2.8 Explain the underlying principles and complications of:

5.3.2.8.1 Blood Transfusion

5.3.2.8.1.1 Blood group and Rh factor

5.3.2.8.1.2 Principles of cross match

5.3.2.8.1.3 Hazards of transfusion

5.3.2.8.1.4 Blood – platelets component

5.3.2.8.2 Bone Marrow Transplantation

## 5.4 Infectious and Tropical diseases

5.4.1 Understanding of the following procedures:

5.4.1.1 Peripheral blood smear

5.4.1.2 Splenic aspiration

5.4.1.3 Z – N staining

5.4.1.4 Gram's staining

5.4.1.5 Bone marrow examination

5.4.1.6 Stool examination

5.4.1.7 Aldehyde test

5.4.1.8 Liver biopsy

5.4.2 Microbiological aspects of various infectious disease

5.4.3 Underlying pathogenesis of various infectious/ tropical disorders

5.4.4 Basic pharmacokinetics of drugs used for treatment of tropical and infectious diseases

5.4.5 Diagnose and manage following emergencies:

5.4.5.1 Septicemia, septic shock

5.4.5.2 Cerebral malaria/black water fever

5.4.5.3 Tetanus/gas gangrene

5.4.5.4 Acute viral encephalitis

5.4.5.5 Hepatic Encephalopathy

5.4.5.6 Enteric Encephalopathy

5.4.5.7 HIV & AIDS

## 5.5 Rheumatology

5.5.1 Bone marrow aspiration

5.5.2 Bone marrow biopsy

5.5.3 Z-N staining

5.5.4 Muscle biopsy

5.5.5 Skin biopsy

5.5.6 Arthro centesis

5.5.7 Intra – articular injections

5.5.7.1 Anatomical and physiological aspects of joints muscle and blood vessels in relation to rheumatologic conditions

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- 5.5.7.2 Basis of cellular and humoral immune response, autoimmunity and genetherapy in rheumatological disorders
- 5.5.7.3 Interpret the results of various tests such as LE cell, ANF anti-ds DNA, electrophoresis, complement system
- 5.5.7.4 Analysis of synovial fluid
- 5.5.7.5 Interpret the X-ray findings of bones and joints
- 5.5.7.6 Interpretation of the results of :
  - 5.5.7.6.1 Muscle biopsy
  - 5.5.7.6.2 Skin biopsy
  - 5.5.7.6.3 Kidney biopsy
- 5.5.7.7 To diagnose and manage the following rheumatology emergency :
  - 5.5.7.7.1 Vasculitis
  - 5.5.7.7.2 SLE with crisis

**5.6 Endocrinology and metabolic diseases**

- 5.6.1 Understanding of the following procedures:
  - 5.6.1.1 Arterial puncture for blood gas analysis
  - 5.6.1.2 Use of glucometer and stripes for blood sugar
  - 5.6.1.3 Urine examination for sugar, Ketones, Specific gravity
- 5.6.2 Interpret the findings of the following procedures/tests:
  - 5.6.2.1 Arterial blood gas analysis
  - 5.6.2.2 Pulse oximetry
  - 5.6.2.3 Thyroid function tests
  - 5.6.2.4 Pituitary function tests
  - 5.6.2.5 Parathyroid function tests
  - 5.6.2.6 Adrenal gland function tests
  - 5.6.2.7 G.T.T
  - 5.6.2.8 Sex harmony analysis
  - 5.6.2.9 Plain X-ray of various parts concerned
- 5.6.3 Interpret the finding of :
  - 5.6.3.1 FNAC report of thyroid gland
  - 5.6.3.2 CT Scan reports of various endocrine organs
- 5.6.4 Diagnose and manage following emergencies :
  - 5.6.4.1 D.K.A. and coma and hyperosmolar non ketotic coma
  - 5.6.4.2 Hypoglycaemia
  - 5.6.4.3 Thyroid crisis
  - 5.6.4.4 Myxoedema coma
  - 5.6.4.5 Phaeochromocytoma
  - 5.6.4.6 Hypopituitarism
  - 5.6.4.7 Hypocalcaemia

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5.6.4.8 Acute adrenocortical crisis

5.6.4.9 Hyperpituitarism

5.6.5 Explain the structural and functional basis:

5.6.5.1 Various endocrine glands, homeostatic control mechanism of hormone regulation, and the genetic basis of various endocrine disorders

**5.7 Cardiology**

5.7.1 Diagnose, order and interpret appropriate investigations and manage the following clinical conditions:

5.7.1.1 Acute Rheumatic Fever

5.7.1.2 Valvular heart disease: rheumatic and non- rheumatic

5.7.1.3 Common congenital heart diseases

5.7.1.4 Hypertension and hypertensive heart disease

5.7.1.5 Ischaemic heart disease:

5.7.1.5.1 Stable and unstable angina,

5.7.1.5.2 Acute myocardial infraction

5.7.1.6 Cardiomyopathies: dilated cardiomyopathy, hypertrophic cardiomyopathy, restrictive cardiomyopathy

5.7.1.7 Pericardial diseases: pericarditis, pericardial effusion and constrictive pericarditis

5.7.1.8 Diseases of great arteries: coarctation of aorta, aortitis, aneurysm

5.7.1.9 Deep vein thrombosis: thromboembolism & pulmonary embolism

5.7.1.10 Arrhythmias

5.7.1.10.1 Bradyarrhythmia (SA, AV blocks)

5.7.1.10.2 Tachyarrhythmia (SVT, VT, VF, WPW, AF, AVF)

5.7.1.10.3 Infective Endocarditis

5.7.2 Interpret the investigative of following procedures:

5.7.2.1 ECG with various arrhythmia

5.7.2.2 Stress electrocardiomyopathy

5.7.2.3 Echocardiogram of common acquired and congenital heart disease

5.7.2.4 Cardiac enzymes, pericardial fluid analysis

5.7.3 Diagnose and manage

5.7.3.1 Pulmonary oedema and cardiogenic shock

5.7.3.2 Dyslipidaemias

5.7.3.3 Cor pulmonale and pulmonary arterial hypertension

5.7.3.4 Electrolytes imbalance

5.7.4 Basic science applied to cardiology

5.7.4.1 Fetal circulation

5.7.4.2 Coronary circulation

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- 5.7.4.3 Pulmonary circulation
- 5.7.4.4 Embryogenesis of congenital heart diseases
- 5.7.4.5 Valvular apparatus
- 5.7.4.6 Conduction system
- 5.7.4.7 Pharmacology of cardiac drugs
- 5.7.4.8 Exercise physiology
- 5.7.4.9 Etiopathogenesis and pathophysiology of various cardiac diseases in relation to clotting system, lipid abnormalities, infectious diseases
- 5.7.4.10 Hemodynamics (exercise, high altitude, metabolic and hormonal disorders, fetal circulation)

**5.8 Nephrology**

- 5.8.1 Diagnose, investigate and treatment of following renal emergencies:
  - 5.8.1.1 Acute renal failure
  - 5.8.1.2 Renal colic
  - 5.8.1.3 Haematuria
  - 5.8.1.4 Fluid, electrolyte and acid-basic imbalance
- 5.8.2 Diagnose, investigate and treatment of following common renal diseases:
  - 5.8.2.1 Acute glomerulonephritis
  - 5.8.2.2 Nephrotic syndrome
  - 5.8.2.3 Urinary tract infection
  - 5.8.2.4 Chronic renal failure
  - 5.8.2.5 Adult polycystic kidney disease, Alports syndrome
  - 5.8.2.6 Diabetic Nephropathy
  - 5.8.2.7 Renal tubular acidosis (RTA)
  - 5.8.2.8 Interstitial Nephropathy
  - 5.8.2.9 Toxic Nephropathy
  - 5.8.2.10 Lupus Nephritis
  - 5.8.2.11 Nephrocalcinosis and Nephrolithiasis
  - 5.8.2.12 Renal artery stenosis (RAS)
- 5.8.3 Interpret investigations of :
  - 5.8.3.1 Renal function test (RFT)
  - 5.8.3.2 Blood gas analysis
  - 5.8.3.3 Renal biopsy report
- 5.8.4 Basic principles of haemodialysis and peritoneal dialysis and their specific indications

**5.9 Neurology**

- 5.9.1 Perform following procedures independently:
  - 5.9.1.1 Lumbar puncture

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- 5.9.1.2 Intrathecal injection
- 5.9.1.3 Administration of IV contrast agent
- 5.9.2 Understanding of the following procedures
  - 5.9.2.1 EEG, EMG, Nerve conduction studies
- 5.9.3 Interpretation of the findings of:
  - 5.9.3.1 CT scan / MRI scan of:
    - 5.9.3.1.1 Subdural haematoma
    - 5.9.3.1.2 Intracranial haemorrhage including – subarachnoid haemorrhage
    - 5.9.3.1.3 Infarction
    - 5.9.3.1.4 Obstructive hydrocephalus
  - 5.9.3.2 Myelogram :
    - 5.9.3.2.1 Complete obstruction
    - 5.9.3.2.2 Intramedullary compression
    - 5.9.3.2.3 Extramedullary compression
- 5.9.4 Interpretation of the results of:
  - 5.9.4.1 Muscle biopsy
  - 5.9.4.2 Nerve biopsy
  - 5.9.4.3 EEG
  - 5.9.4.4 EMG
  - 5.9.4.5 Nerve conduction study
  - 5.9.4.6 Carotid and vertebral angiogram
  - 5.9.4.7 CT myelography
- 5.9.5 Diagnose and management the following neurological emergency:
  - 5.9.5.1 CVA including subarachnoidhaemorrhage
  - 5.9.5.2 Meningitis
  - 5.9.5.3 Encephalitis
  - 5.9.5.4 Unconscious patient
  - 5.9.5.5 Status epilepticus
  - 5.9.5.6 Myasthenia gravis
  - 5.9.5.7 Increased Intracranial pressure
  - 5.9.5.8 Gullainie – Barry syndrome
  - 5.9.5.9 Hypoxic encephalopathy
- 5.10 **Oncology**
- 5.11 **Dermatology**
  - 5.11.1 Scabies
  - 5.11.2 Superficial mycoses
  - 5.11.3 Superficial bacterial infections
  - 5.11.4 Diagnosis and management of drug induced cutaneous eruptions

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5.12 **Psychiatry**

5.12.1 Diagnose anxiety neurosis, depression and schizophrenia

5.12.2 Differentiate between functional and organic psychoses (simple and uncomplicated)

5.12.3 Treat cases of anxiety neurosis and depression

5.12.4 Diagnose and manage substance abuse.

**6. Recent Advances in Internal Medicine and Emergencies**

6.1 **Cardiovascular emergencies:** Cardiac arrest, Acute MI, Cardiogenic shock, Cardiac arrhythmias, Pulmonary edema, Hypertensive crisis, Acute cardiac tamponade, DVT & pulmonary embolism

6.2 **Respiratory emergencies:** Hemoptysis, Acute respiratory failure, Pneumothorax, Status asthmaticus, ARDS

6.3 **Gastrointestinal emergencies:** G.I. bleeding, Acute gastroenteritis and food poisoning, Acute pancreatitis, Hepatic failure, Acute abdomen

6.4 **Neurological emergencies:** CVA including SAH, Hypertensive encephalopathy, Meningitis, Encephalitis, Unconscious patient, Status epilepticus, Myasthenia gravis

6.5 **Endocrine and metabolic emergencies:** DKA and coma, Hypoglycemia, Hyperosmolar nonketotic diabetic coma, Thyroid crisis, Myxoedema coma, Pheochromocytoma, Acute adrenocortical crisis, Hypopituitarism

6.6 **Hematological emergencies:** Aplastic anaemia, Agranulocytosis, Acute thrombocytopenic purpur, Leukemia, Hemophilia and allied disorders

6.7 **Renal emergencies:** Renal colic, Renal failure, Hematuria

6.8 **Miscellaneous emergencies:**

6.8.1 Emergencies in fluid and electrolyte balance

6.8.2 Acute emergencies in infectious and tropical disease

6.8.3 Malaria

6.8.4 Septicemia

6.8.5 Tetanus

6.8.6 Snake bite

6.8.7 Dog bite & rabies

6.8.8 Poisonings

6.8.9 Drowning

6.8.10 Electrocution

6.8.11 High altitude sickness

--- The end ---