

## SYLLABUS FOR EXAMINATION FOR THE POST OF ASSISTANT SURGEON

### Medical Sciences-Allopathy

#### Degree Standard

#### BASIC MEDICAL SCIENCES ANATOMY

1. GENETICS: Structure and function of gene and anatomy of genome, Classification of genetic disorders, Chromosomal disorders/ Cancer genetics, Genetic counseling, Prenatal diagnosis, Gene therapy.
2. GENERAL ANATOMY:- General Embryology, Embryology relating to Cardiovascular, respiratory, Urogenital, alimentary and Nervous system, Osteology.
3. APPLIED ANATOMY :- Cardiovascular System:- Orientation of the heart, Coronary circulation, Nerve supply of the heart, Electrical conduction system.
4. RESPIRATION SYSTEM:- Surface anatomy, Gross anatomy, Lobes, Segments, C pleura Mediastinum & Thoracic Cage- Histology, Lung Defences.
5. ALIMENTARY TRACT AND PANCREAS:- Teeth/ Oral cavity, Oro- Pharynx- Oesophagus- Alimentary Tract & Pancreas- blood supply, nervous supply, Lymphatic drainage, Congenital and genetic abnormalities of Alimentary tract and pancreas.
6. LIVER AND BILIARY SYSTEM.
7. CONNECTIVE TISSUES, JOINTS & BONES.
8. NERVOUS SYSTEM :- 1. Motor System:- Pyramidal system/ Extra Pyramidal system Cerebellum, 2. Sensory system 3. Reflex activity, 4. Control of bladder & Sphincters 5. Cranial Nerves.
9. LYMPHOID ORGANS:- Applied Microbiology, Sterilisation, disinfection, Bacterias, Microbacterium, Fungus, Viral Chlamydial, rickettsial, Streptococcus, Staphylococcus, Corynebacteria, bacillus, Bordetella, Salmonella, Mycobacteria –TB, Leptrae, atypical Mycobacteria, Viruses – RNA- Arena viruses, Bunya viruses. Filioviruses, Paramy-Xoviruses, Picorna viruses.(HIV) – Retroviruses, Rhabdoviruses, arboviruses, Tegaviruses, DNA- Herpesviruses, Rapoviruses, Pexviruses. Mycoses- Cutaneous – Subcutaneous fungal infection systemic fungal infection.

SPIROCHETES;- Leptospira, Borrelia, Treponema, Immune responses & inflammation, Allergy, hyper Sensitivity, Transplantation & graft rejection autoimmunity and protozoa, Helminthes, Anthropods.

APPLIED PATHOLOGY:- Injuries

GENERAL PATHOLOGY :- Inflammation, Wound healing, Infections, neoplasia, Immuno responses & Inflammation.

- I. CARDIO VASCULAR SYSTEM :- Cardiomyopathy, Pericardial diseases, Valvular diseases, Endocarditis, Aneurysms.
- II. RESPIRATORY SYSTEM :- Tuberculosis, Chronic Bronchitis & Emphysema, Asthma, Pneumonia, Bronchogenic Carcinoma, Suppurative diseases of the lung, acute respiratory Distress Syndrome: Respiratory involvement in connective tissue disorder, Tracheitis, Laryngitis, Pleural diseases.
- III. ALIMENTARY TRACT & PANCREAS
- IV. R.LIVER AND BILIARY SYSTEM
- V. MUSCULOSKELETAL SYSTEM
- VI. SKIN
- VII. RENAL SYSTEM :- Glomerular Nephritis, Nephrotic syndrome, Renal failure, Congenital Abnormalities of the Kidneys, Tumours of the kidney & Genito urinary tract, Calculi in Renal system.
- VIII. BLOOD :- Disorders of erythrocytes, Disorders of white cells, Blood transfusion. Haemostasis, Thrombosis, Urogenital system.
- IX. ONCOLOGY
- X. PATHOLOGY
- XI. NERVOUS SYSTEM :- Coma, brain death, cerebral tumours, cerebro vascular, disorders, Parkinsonism, diseases of muscles, Peripheral nerves, spinal cord.

APPLIED BIO- CHEMISTRY

Liver Function Tests, Renal Function Tests, Major Electrolyte disorders – Calcium, Phosphate, Magnesium, disorders ( Same as in Bio- Chemistry), Acid Base disorders, Calcium Metabolism, Lipid metabolism, Porphyrin.

ENDOCRINE SYSTEM :- Hormones estimation, (Hypothalamus/ Pituitary gland), Thyroid Hormones, Parathyroid hormone, Corticosteroids, Catecholamines, hyperglycaemia/Hypoglycaemia.

## APPLIED PHYSIOLOGY

### CARDIO VASCULAR SYSTEM :-

Myocardial contraction, factors influencing cardiac output, factors influencing resistance to coronary blood flow/ systemic blood, physiological basis of physical signs.

RESPIRATORY SYSTEM :- Ventilation, blood flow and diffusion, lung function tests as applied to obstructive airways/restrictive airways disease.

ALIMENTARY TRACT AND PANCREAS :- Controlling/ Co- ordinating mechanism/ Secretions, absorption, Defence mechanism.

PHYSIOLOGY OF WATER AND ELECTROLYTES :- Major electrolyte disorders, Hyponatraemia, Hyponatraemia, Hypo and Hyperkalaemia, Sodium and water excess

LIVER AND BILIARY SYSTEM:- Temperature Regulation, renal function tests, Physiology of skeletal muscle.

ENDOCRINOLOGY:- Adrenal Corticosteroids, Antagonist, Corticotrophin, Thyroid hormones, Hypothalamic, Pituitary hormones, sex hormones, contraception.

BLOOD:- Blood cell formation, stem and progenitor cells, Assessment of haematological parameters.

NERVOUS SYSTEM:- Sensory and Motor - Functions, Speech, vision, control of bladder and sphincters, sleep, pain.

## APPLIED PHARMACOLOGY

CARDIO VASCULAR SYSTEM:- Anti ischaemic drugs (Anti anginal drugs), anti hypertensives, antifailure drugs, drugs used in cardiac dysrhythmia, drugs used in shock, hypotension, sympathomimetics, hyperlipidaemias, antiarrhythmic drugs.

RESPIRATORY SYSTEM:- Antituberculous drugs, antiasthmatic drugs, antibiotics, antifungal, anticancer drugs, cough suppressants, mycolytics, expectorants, antihistamines. Alimentary tract - pancreas, liver biliary tract, drugs for peptic ulcer, drugs for vomiting, antiemetics and prokinetic drugs, drugs for constipation, misuse of laxatives, drugs for diarrhoea, drugs for abnormal gut motility, drugs for inflammatory bowel disease, drug induced liver injury, drugs used to dissolve gall stones, digestive enzymes.

KIDNEY AND URINARY TRACT:- Diuretic drugs, carbonic anhydrase, inhibitors.

ONCOLOGY:- Principles of Management, Principles of Chemotherapy, Principles of Endocrine therapy.

NERVOUS SYSTEM:- Analgesics - Narcotics/OPIO'D, Hypnotics/Anxiolytic agents, Classification and dosage of psychotropic drugs, Neuroleptics, Antidepressants, MAOIs, Lithium, Psychostimulants, Appetite Control, Amphetamines, Xanthines, Antiepileptics, Antiparkinsonian Drugs, Psychodysleptics (or) hallucinogens, Drug dependence.

ENDOCRINOLOGY:- Adrenal Steroids & their synthetic analogues, Antidiabetic agents - insulin, Oral Hypoglycaemic agents, Thyroid Hormones, Antithyroid drugs.

BLOOD:- DRUGS ACTING:- Coagulation System, Fibrinolytic System, Platelets, Iron Therapy, Vitamins - B12 /Folic Acid, Haemopoietic growth factor.

ANAESTHESIA AND NEUROMUSCULAR BLOCK:- General Anaesthesia, Pharmacology of Anaesthetic, Inhalation agents, Intravenous anaesthetics, Muscle relaxants, Neuro Muscular Blocking Drug Local anaesthetics, Obstetric analgesia/anaesthesia, anaesthesia in diseased, old age, Childhood, Sedation in intensive therapy units.

ARTHRITIS & ANTIINFLAMMATORY DRUGS.

INFECTION:- Chemotherapy, anti-bacterial drugs, chemotherapy of bacterial infections, Chemotherapy of viral, fungal, protozoal and helminthic infection.

DRUGS & SKIN:- Vehicles for delivering drugs to skin, topical analgesia, antipruritis, adrenocortical steroids, Sun screens, Sun burn and Photosensitris.

POISONING/DRUG OVERDOSE/ANTIDOTES Indiscriminate use of drugs/Antimicrobials in Foetus, Newborn, Infants, adults and in special situations like Hepatitis, Renal problems, Diabetes, etc.

PAPER – II

(INCLUDES General Medicine, Psychiatry, Geriatrics, Paediatrics, Surgery, Gynaecology, Obstetrics and Community Medicine)

1. GENETICS:

1. Single Gene disorders
2. Chromosomal disorders
3. Multifactorial disorders
4. Management, treatment and prevention of genetic disease.

## 2. IMMUNOLOGICAL DISEASES.

3. Climatic and environmental factors producing diseases. a) disorders of heat/cold/altitude/barometric pressure/pollution both indoor and outdoor. b) Diseases due to infections (Bacterial, Viruses, Spinochaetes, fungi, protozoa, helminths, arthropods)

## 4. DISEASES OF THE CARDIO VASCULAR SYSTEM:-

Symptoms and signs in a CVS, ECG, exercise-stress, ECG Holter, monitor, radiology, ECHO, cardiac catheterisation and angiography, radio nucleotide scanning (PET) disorders of heart rate, rhythm and conduction, ischaemia, heart disease, vascular disease, diseases of the heart valves, congenital heart, diseases, diseases of the myocardium endocardium, and pericardium.

## 5. DISEASES OF THE RESPIRATORY SYSTEM:-

Symptoms and signs in respiratory system. Lung function test, spirometry, body box, diffusion studies imaging sciences chest, x-ray, computed tomography, MRI, Ventilation perfusion imaging, pulmonary angiography, endoscopy-laryngoscopy, bronchoscopy both rigid and flexible, mediastroscopy, Pleural aspiration & thoracoscopy skin tests. Immunological & Serological, tests, Microbiological, Histopathological and Cytological examinations. Chronic obstructive pulmonary diseases Bronchial Asthma, upper respiratory tract infections, pneumonia tuberculosis. respiratory diseases caused by fungi, tumours of the bronchus and lung, interstitial and infiltrative pulmonary diseases. Diseases of nasopharynx, larynx, trachea, diseases of pleura, diaphragm and chest wall.

5. Alimentary tract and pancreas, Hepato biliary system, symptoms and signs of the alimentary tract, pancreas, hepato biliary system. Investigations:- Plain radiographs, barium studies, CT, MRI, Arteriography, Interventional radiology, ultrasonography, radionuclide imaging, endoscopy - (rigid and flexible), sigmoidoscopy, oesophagoscope ERCP, Proctoscopy, Biopsies, secretory studies, motility studies, stool examination, liver function tests, diseases of the mouth, oesophagus. stomach and duodenum, gastro intestinal haemorrhage, acute abdomen, disease of small intestine, irritable bowel disease, diseases of the large intestine, diseases of the pancreas, acute and chronic parenchymal liver disease, tumours of the liver, liver transplantation, liver abscess gall bladder and other biliary diseases.

## 7. WATER - ELECTROLYTE - ACID BASE BALANCE DISTURBANCES:-

Serum electrolyte estimation. ABG, Major electrolyte disorders, acid base disorders, calcium, phosphate and Magnesium disorders.

8. NUTRITIONAL FACTORS IN DISEASE Classification of Nutritional disorders. Energy yielding Nutrients, Protein Energy Mal-nutrition in -adults -children vitamins, Minerals, Nutrition support in hospital.

9. RENAL AND GENITOURINARY SYSTEM Symptoms and signs of renal involvement, Renal function tests. Glomerular diseases, infections of the kidney of urinary tract, obstruction of the urinary tract, urinary tract calculi and nephrocalcinosis, congenital abnormalities of the kidneys, Drugs and kidney, tumours of the kidney and genitourinary tract.

10. ENDOCRINE AND METABOLIC DISEASES INCLUDING DIABETES MELLITIS Symptoms and signs pertaining to various endocrine organs, disorders of Hypothalamus, pituitary gland, thyroid gland, parathyroid gland, adrenal gland, Reproductive organs. Diabetis Mellities and other metabolic disorders - like lipid, porphynia, etc.

11. DISEASES OF THE BLOOD:

Disorders of the erythrocytes, white cells, blood transfusion, haemostasis, venous thrombosis.

12. DISEASES OF THE CONNECTIVE TISSUES JOINTS AND BONES Back disorders, Regional periarticular or "soft tissue " disorders, crystal deposition diseases, Inflammatory Joint disease, connective tissue disease, diseases of bone disorders of collagen and proteoglycan and neoplastic disease of bone, Osteoarthritis and related disorders.

13. DISEASES OF THE SKIN:

Eczemas, Erythematous scaly eruptions, disorders of the pilosebaceous unit, skin ulceration due to vascular disease, Dullous diseases, skin reactions to light, disorders of pigmentation, hair and nails and skin tumours.

14. PSYCHIATRY:-

Classification of Psychiatric disorders, aetiological factors. Causes of acute confusional state, features of alcohol abuse and dependence, Physical sequelae of alcohol abuse, factors associated with increased suicidal risk after deliberate self harm.

TREATMENTS USED IN PSYCHIATRY:-

Clinical Syndromes - Organic Psychiatric disorders, substance misuse, Schizophrenia, affective disorders, Neurotic, Stress - related and somatoform disorders, eating disorders, sleep disorders, Sexual dysfunctions, puerperial mental disorders, personality disorders, factitious disorders. Special aspects of psychiatry like, Psychiatric problems in Hospital and community. Legal aspects of psychiatry.

15. DISEASES OF THE NERVOUS SYSTEM:-

Disorders affecting cranial Nerves.(I to XII) cerebral tumours, headache, facial pain, epilepsy, cerebrovascular disorders, movement disorders, demyelinating diseases, Infections of the nervous system. Diseases of the spinal cord, peripheral nerves, muscles, disorders of sleep, degenerative disorders. Nutritional neurological diseases, paraneoplastic neurological syndromes. Investigations of the Nervous system.

**CLINICAL EXAMINATION:-**

Imaging - Planning radiology, contrast radiology(angiography - DSA-Digital sub-traction angiography) Myelography & radiculography pneumoencephalography, computed tomography, Magnetic Resonance Imaging - MRI - Radionucleotide cerebral scanning, Emission computed tomography.

**CLINICAL NEUROPHYSIOLOGY:-**

Electroencephalography(EEG) Evoked Potential Recording Biochemical Tests:- Tests of Muscle breakdown and tests for specific disorders, Tests of autonomic, Nervous systems. CSF Examination.

**16. GERIATRIC MEDICINE:-**

Normal old age, Effects of ageing on the pharmacokinetics and pharmacodynamics of drugs. Stroke Rehabilitation, Nonspecific presentation of disease in the elderly, common causes of falls, fecal and urinary incontinence in elderly.

**17. ACUTE POISONING:-**

Clinical Features and management of Common acute poisonings. Prevention of acute poisoning.

**18. EMERGENCY MEDICINE:-**

Cardiopulmonary Resuscitation (CPR), Advanced Cardiac life support(ACLS)

**19. HIV infection and AIDS.**

20. The eye as a diagnostic indicator of systemic disease.

21. Otorhinolaryngology for non-specialist Ear/Pharyngeal & laryngeal diseases.

22. Labyrinth/Nasal Obstruction. Neck Swellings, Cysts - Salivary

**23. Paediatrics:**

Growth & development, Nutritional Status, antenatal paediatrics, care of New born & premature babies. Immunisation programme - WHO - National, Infant feeding, common birth injuries, diarrhoeal disorders, Acute respiratory infections, Protozoas - parasitic infections, Neurological disorders, Congenital & acquired cardiovascular, renal & Metabolic disorders, Hepatic & blood disorders, Childhood Malignancies, chromosomal & genetic disorders, Child survival & Development, Resuscitation - antenatal care, growth monitoring, oral Rehydration, breast feedings, immunisation etc. Child abuse.

**24. SURGERY:-**

Infection, wound healing, water/electrolytes/,. Nutrition in surgical patients, shock, Hypothermia, Preoperative and post operative care, Oxygen therapy, Management of emergencies, Surgical/Orthopaedics, Multiple system injuries, Fractures & dislocation, What first and measures to be adopted? Burns/Organ transplantation, Varicose veins, venous thrombosis, peripheral arterial disease, paronychia, Tenosynovitis, Infection of palmar spaces. Bursitis, amputation,

artificial limbs, Breast examination, oral cavity - carcinoma, Head injuries & management at the PHC/district hospital level.

Acute abdomen, Pneumothorax, Haemothorax, Radio diagnosis of the emergency conditions - like Duodenal Perforations, fractures etc. Thoracic, abdominal & Pelvic injuries to be recognised, Hernias and Hydrocele. Examination of the patient. Anaesthesia in surgery.

#### 25. GYNAECOLOGY/OBSTETRICS:-

Infection of the genital tract, Tumours of the genital tract, investigations - Pap smear, colposcopy, Colpocytology, fractional curettage, ultrasonography, Laparoscopy, Hysteroscopy, family welfare programme, Breast examination:- Antenatal check up, high Risk Pregnancy, Prevention of low birth weight babies, Maternal changes during pregnancy in CVS, respiratory system and renal function. PREGNANCY:- Special circumstances - protein Energy Malnutrition, Diabetes, Anaemia, Heart diseases, Malaria, TB, HIV, STD, Infective Hepatitis, Pregnancy and Blood loss, Pregnancy and infection, Pregnancy and Blood transfusion, Anaesthesia.

#### 26. COMMUNITY MEDICINE:-

1. Health statistics
2. Epidemiology
3. Communicable Diseases - Small pox - influenza - Measles - Typhoid fever - Cholera - Malaria - Rabies anthrax-Nosocomial infections - Food poisoning - Sexually Transmitted Diseases
4. Environmental Health and Exposure to chemical
5. Hygiene and Sanitation (including rural sanitation)
6. Public Health Services.
7. Preventive priorities: Hypertension - Family planning - maternal and Child health - Genetic Screening - Surveillance and control of infectious diseases - immunization - sexually transmitted diseases -  
Occupational safety and health Surveillance and control of toxic agents in the Environment  
Accident prevention and injury control - Smoking - Alcohol and Drug Abuse - Nutrition.
8. Principles of health Education.
9. Regional and National health Programmes including social, maternity and Child Health, more emphasis on population/HIV/Leptospirosis, tropical diseases, mother and child health care programme WHO PROGRAMME.

#### MANAGEMENT OF EMERGENCIES:-

- a) To manage acute anaphylactic shock
- b) To manage perivascular failure and shock



- c) To manage Acute Pulmonary Oedema and LVF.
- d) Emergency management of Drowning, Poisoning and Seizures
- e) Emergency Management of Bronchial Asthma & status Asthmaticus .
- f) Emergency Management of Hyperpyrexia
- g) Emergency management of Comatose Patients Regarding Airways, Positioning, Prevention of Aspiration and injuries
- h) Management of Burns
- i) Management of various trauma, Victims
- j) Medico legal cases: - Formalities in cases of Injury poisoning, Sexual offenses, Intoxication and other unnatural conditions.

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