

**FURTHER DETAILS REGARDING MAIN TOPICS OF  
PROGRAMME NO. 04A/2015 (Item No. 1) &  
PROGRAMME NO. 04/2015 (Item No. 13)**

**MEDICAL OFFICER &  
ASSISTANT SURGEON/  
CASUALTY MEDICAL OFFICER**

**KERALA FACTORIES AND BOILERS SERVICE &  
HEALTH SERVICES**

**(CATEGORY No. 66/2013 & 547/2014)**

**1. General Knowledge, Current Affairs & Renaissance in Kerala**

**2. HUMAN ANATOMY**

General Anatomy  
General Embryology  
Upper Limb  
Lower Limb  
Thorax  
Head and Neck  
Brain and Spinal Cord  
Abdomen, Pelvis and Perineum  
Genetics

**3. BIOCHEMISTRY**

Proteins  
Carbohydrates  
Lipids  
Metabolism of Lipids  
Metabolism of Amino acids  
Haemoglobin  
Vitamins  
Mineral Metabolism  
Maintenance of Homeostasis  
Nucleic Acids and Molecular Biology  
Plasma Proteins and Immunoglobulins  
Biochemistry of Cancer  
Clinical Chemistry

**4. HUMAN PHYSIOLOGY INCLUDING BIO-PHYSICS**

Hematology  
Cardiovascular System

Respiratory System  
Gastrointestinal System  
Renal System  
Skin and Temperature regulation  
Nerve - muscle physiology  
Nervous System  
Special Senses  
Audition  
Endocrinology  
Physiology of Reproduction

## **5. FORENSIC MEDICINE AND TOXICOLOGY**

### ***Forensic Medicine***

1. Definition of forensic medicine, forensic pathology and medical jurisprudence
2. Introduction to the subject, historical aspects of forensic medicine
3. Inquest procedures
4. Courts in India and their powers. Supreme Court, High Court, Sessions Court, Assistant Sessions Court and Magistrate Courts.
5. Court procedures. Summons, warrant, Conduct money, Oath / affirmation, types of witnesses, recording of evidence, conduct of doctor in witness box, perjury, hostile witness.
6. Medical certificates and medico legal reports. Birth, death, wound, drunkenness, potency, offence cases, intimation, notification.
7. Death sex
8. Definition, diagnosis and certification (as per MCCD rules), somatic, molecular and brain death. Sudden natural deaths, suspended animation. Changes after death.
  - (a) Algor mortis, Livor mortis, Rigor mortis, cadaveric spasm, cold stiffening, heat stiffening
  - (b) Decomposition, modified forms of decomposition, estimation of time since death.
  - (c) Common post mortem artifacts.
9. Identification
  - (a) Definition.
  - (b) Identification of persons, dead bodies and remains of a person by sex, age, biometry, dental features, scars, moles, tattoos, dactylography, personal belongings, photography, superimposition, DNA.
10. Medico legal autopsy and exhumation
  - (a) Definition of medico legal and clinical / pathological autopsy.
  - (b) Objectives, procedures and formalities of medico legal autopsy.
  - (c) Preservation of articles and tissues of importance during autopsy.
11. Mechanical injuries or wounds
  - (a) Definition of wound, injury, hurt, assault, battery.
  - (b) Classification of injuries, description of blunt force and sharp force injuries.
  - (c) Fire arms – principles, types, examination and interpretation of fire arm wounds. Comparison microscopy.
  - (d) Medico legal aspects of injuries: Difference between ante mortem and post-mortem injuries, determination of different types of injuries, defense wounds, hesitation cuts, fabricated injuries, simple and grievous hurt,

- suicidal, accidental and homicidal injuries, causes of death by mechanical injuries, legal classification of fatal injuries.
- (e) Regional injuries: Injuries to head, neck, thorax, abdomen, pelvis, genitalia, vertebral column and bones.
  - (f) Injuries due to traffic occurrences.
  - (g) Injuries due to physical agents and their medico legal importance: Heat, cold, electricity and lightning. Explosion injuries.
12. Asphyxial deaths: Definition, causes, types, post-mortem appearances and medico legal significance of violent asphyxia deaths like hanging, strangulation, suffocation, smothering, choking, drowning, traumatic asphyxia.
13. Medico legal aspects of deaths due to starvation-forced feeding.
14. Human sexual functions:
- (a) Potency, sterility, virginity, pregnancy, delivery.
  - (b) Abortion, MTP, sexual sterilization, artificial insemination and their legal aspects.
  - (c) Sexual offences and abnormal sexual practices.
  - (d) Legal aspects of the above.
15. Infant and childhood deaths: Viability and determination of intrauterine age of the foetus, live birth, still birth, dead born. Sudden infant death syndrome, child abuse.
16. Biological fluids:
- (a) Blood – preservation and dispatch of samples, importance of blood groups in disputed paternity, hazards of blood transfusion.
  - (b) Seminal and salivary stains preservation, dispatch and importance of grouping.
  - (c) Principles of laboratory tests for identification of the above and interpretation of the results.
17. Forensic psychiatry:
- (a) Definition and brief overview of common mental illnesses.
  - (b) True and feigned mental illnesses.
  - (c) Civil and criminal responsibilities of mentally ill persons.
  - (d) Indian mental health act with special reference to admission, care and discharge of mentally ill persons.
18. Medical jurisprudence:
- (a) Indian medical council and state medical councils, their functions and disciplinary control.
  - (b) Duties and rights and privileges of a registered medical practitioner.
  - (c) Professional conduct, etiquette and ethics in medical practice.
  - (d) Professional secrecy and privileged communication.
  - (e) Medical negligence: Civil, criminal, contributory negligence, vicarious responsibility, res ipsa loquitur, prevention of medical negligence and defence in medical negligence suits.
  - (f) Consent: Types, age in relation to consent, consent in relation to mental illness and alcohol intoxication, consent in emergency situations.
  - (g) Consumer protection act.
  - (h) Certification of births, deaths, illness, fitness, disability.
19. Forensic toxicology:
- (a) Definition and general principles of management of a case of poisoning.
  - (b) Medico legal duties of a doctor in a case of poisoning, preservation dispatch of viscera for chemical analysis. Role of chemical examiner's laboratory and forensic science laboratory in brief.

- (c) Diagnosis and principles of therapy and medico legal aspects of the following poisons, giving special emphasis to those of regional importance.
- i) Corrosive poisons: strong mineral acids, alkalies and organic acids – (carbolic, formic and oxalic acid).
  - ii) Metallic poisons: Lead, Arsenic and Iron.
  - iii) Animal poisons: snake and scorpion bites.
  - iv) Deliriant: Dhatura, Cannabis and Cocaine.
  - v) Inebriants: Methyl and Ethyl alcohol.
  - vi) Asphyxiants: Carbon monoxide, carbon dioxide, Hydrogen sulphide and Cyanides.
  - vii) Cardiac Poisons: Cerbera Odollam, Cerbera thevitia, Nerium odorum.
  - viii) Insecticides: Organophosphorous compounds, carbamates and Organochloro compounds, Aluminium phosphide and Zinc phosphide.
- (d) Drug abuse and dependence.
- (e) Inorganic non metallic poisons: Phosphorous.
- (f) Organic vegetable irritants: Abrus precatorius, capsicum, calotropis, Semicarpus anacardium, Croton.
- (g) Convulsants: Strychnine.
- (h) Paralytic agents: Curare.
- (i) War gases and industrial gases.
- (j) Chloral hydrate
- (k) Mechanical poisons.

## **6. MICROBIOLOGY**

### ***I. General microbiology***

1. Introduction to microbiology
2. Morphology of bacteria comparison with other microbial forms
3. Growth, nutrition culture media
4. Identification of bacteria
5. Bacterial genetics
6. Antibacterial agents and antibiotic sensitivity test
7. Infection – Source and spread of infection
8. Sterilisation and disinfection
9. Response to microbial infections

### ***II. Systematic bacteriology***

Gram positive Cocci-Staphylococci, Streptococci, Pneumococci  
 Gram negative Cocci- Neisseria  
 Gram positive Bacilli-Corynebacterium, Listeria, Bacillus  
 Mycobacteria, Nocardia, Actinomyces  
 Clostridia, Nonsporing anaerobes  
 Gram negative Bacillus-Haemophilus, Bordetella, Brucella, Enterobacteria / Yersinia  
 Pseudomonas, Pasteurella, Acinetobacter  
 Vibrio / Campylobacter  
 Mycoplasma, Legionella, Rickettsia, Chlamydia  
 Spirochetes

### ***III. Virology***

1. General characteristics of viruses
2. Virus host interaction
3. Replication of virus
4. Pox virus, Herpes, Adenovirus
5. Papova, Retrovirus
6. Myxoviruses
7. Picorna virus
8. Hepatitis, Miscellaneous
9. Rhabdo virus
10. Arboviruses
11. Oncogenic viruses
12. Bacteriophages

### ***IV. Immunology***

1. Introduction, classification, type and cells involved in immunity
2. Antigen, antibodies
3. Complement in health and diseases
4. Hypersensitivity
5. HLA antigens in health and diseases
6. Immunodeficiency diseases
7. Serological test in medical practices
8. Autoimmunity
9. Tumour and transplantation
10. Immunoprophylaxis and immunotherapy

### ***V. Parasitology***

1. Introduction of parasitic disease
2. Protozoal infections – Amoebiasis, Plasmodium, Leishmaniasis, Trypanosoma, Giardia, Balantidium, Cryptosporidium, Trichomonas, Toxoplasma, Pneumocystis – laboratory diagnosis of protozoal infection
3. Helminthus – intestinal nematodes, tissue nematodes, cestodes, trematodes – laboratory diagnosis of helminthic infections

### ***VI. Mycology***

1. Introduction – classification of fungi and general principles of lab diagnosis
2. Superficial infections
3. Subcutaneous infections – Mycetoma, Rhinosporidiosis
4. Systematic mycosis
5. Opportunistic fungi

## **7. PATHOLOGY**

Cell injury

Infectious diseases

Circulatory disturbances

Growth disturbances

Miscellaneous disorders

Haematopathology

Cardiovascular pathology

Respiratory pathology

Renal and urinary tract pathology  
Pathology of gastrointestinal tract  
Liver and Biliary tract pathology  
Lymphoreticular system.  
Reproductive system.  
Osteopathology  
Endocrine Pathology  
Neuropathology  
Dermato-pathology

## **8. PHARMACOLOGY**

General pharmacology and basic concepts of clinical pharmacology  
Autonomic nervous system  
Autacoids and related drugs  
Central nervous system  
Cardiovascular system  
Drugs affecting blood and blood formation  
Respiratory system  
GIT  
Drugs acting on Endocrine system  
Chemotherapy  
Toxicology  
Miscellaneous  
National health programmes  
Infective/Parasitic conditions  
Medical emergencies

## **9. COMMUNITY MEDICINE**

### ***I. Concept of health and disease***

1. Definition, concepts and evolution (history) of public health
2. Definition of health, holistic concepts of health including the concept of spiritual health, appreciation of health as a relative concept, dimensions and determinants of health
3. Characteristics of agent, host and environmental factors in health and disease and the multifactorial etiology of disease.
4. Understanding the concept of prevention and control of disease
5. Understanding the natural history of disease and application of interventions at various levels of preventions
6. Introduction to various health indicators
7. Health profile of India

### ***II. Social and behavioural sciences***

1. Concept of sociology and behavioural science, Clinico-socio-cultural and demographic evaluation of the individual, family and community
2. Assessment of barriers to good health and health seeking behaviour
3. Role of family in health and disease
4. Socio-cultural factors related to health and disease in the context of urban and rural societies
5. Assessment of socio-economic status, effect of health and illness on socio-economic status

6. Doctor-patient relationship
7. Social psychology, community behaviour and community relationship, hospital sociology and psychology
8. Social security – health insurance: Organized sector, unorganized sector, special groups (Eg: elderly)
9. Impact of urbanization on health and disease
10. Poverty link to health and disease and poverty alleviation programmes
11. Intelligence – IQ and EQ
12. Personality – Types, Interpersonal relationships
13. Attitude, Behaviour, habits
14. Emotions, frustrations, role of emotions in health and coping with emotions
15. Conflicts – internal, interpersonal and conflict resolutions, defense mechanisms
16. Stress and coping skills – integrated (Psychiatry)
17. Ethics
18. Learning – Types and skills
19. Development and health interface – poverty and health, poverty alleviation programme, health of the marginalized, sustainable and inclusive development
20. Gender and health including gender based violence, epidemiology of violence and its prevention and control life skill education

### ***III. Environment and Health***

1. Water: concepts of safe and wholesome water, sanitary sources of waterborne diseases, water purification process, water quality standards.
2. Physical, Chemical and bacteriological standards of drinking water quality and tests of assessing bacteriological quality of water
3. Health hazards of air, water, noise, radiation pollution.
4. Concepts of water conservation, rainwater harvesting and global warming.
5. Concepts of solid waste, human excreta and sewage disposal.
6. Awareness of standards of housing and its effect of housing on health.
7. Role of vectors in the causation of diseases.
8. Identifying the features of vectors and their control measures.
9. Life cycles of vectors and advantages and limitations of various vector control measures.
10. Mode of action, application cycle of commonly used insecticides and rodenticides.
11. Urban waste management.
12. Recent issue in environmental health.
  - (a) Stockholm convention
  - (b) Basel convention
  - (c) Kyoto Protocol
13. Radiation prevention and control

Health promotion and education / communication for behavioural change (Information, education, communication)

Nutrition

Occupational health

Bio-statistics

Basic epidemiology

Epidemiology of specific diseases: Communicable and noncommunicable

Demography and vital statistics

Reproductive and child health

School health

Urban health  
Health care system in India  
Health planning, management and administration  
Disaster management  
Legislation and public health  
International health  
Health care waste management  
Health care of elderly  
Mental health and behavioural problems  
Development and health interface  
Genetics  
Disability

## **10. OPHTHALMOLOGY**

Acute conjunctivitis, Trachoma, Allergic conjunctivitis, Pingecula, pterygium, Xerosis/  
bitot spots, Dry eye, Angular conjunctivitis, neonatal conjunctivitis, subconj hemorrhager,  
D/D of conjunctival and limbal nodule  
Chronic conjunctivitis, Dry eye, membranous conjunctivitis, Inclusion conjunctivitis  
Corneal Inflammations: Corneal ulcers-bacterial, fungal, viral, Mooren's ulcer, Vitamin  
A deficiency and keratomalacia, exposure keratitis, neuroparlytic keratitis, corneal  
blindness, eye banking, eye donation, keratoplasty, arcus senilis, corneal oedema, deep /  
interstitial keratitis, degenerations and dystrophies, overview of keratorefractive surgery.  
Scleritis, episcleritis  
Iridocylitis, Panophthalmitis, Endophthalmitis  
Systemic associations of uveitis, Choroiditis, Coloboma iris, ocular albinism, vitreous  
hemorrhage – causes  
Synchisis syntillans, Asteroid hyalosis.  
Angle closure glaucoma, open angle glaucoma, steroid induced glaucoma, lens induced  
glaucoma including surgery and management  
Cataract and management, cong. Conditions, surgery and complications, lens  
abnormality, secondary glaucomas, congenital glaucoma  
Fundus changes in diabetes, hypertension, anaemias, pregnancy induced hypertension,  
haematological disorders, myopia  
Photocoagulation  
Retinal vascular diseases  
Central retinal artery occlusion, central retinal vein occlusion, retinal detachment,  
retinopathy of prematurity, retinitis pigmentosa, retinoblastoma, Pappilledema, optic  
neuritis, optic atrophy  
Awareness of amblyopia, types of squint, paralytic, non-paralytic  
Common causes of proptosis, orbital cellulites, cavernous sinus thrombosis  
Dacryocystitis – congenital, acute, chronic, epiphora  
Ectropion entropion, trichiasis, ptosis, lagophthalmos, symblepharon, blepharitis,  
Chalazion, refractive error, myopia, hypermetropia, Astigmatism, presbyopia, aphakia /  
pseduophakia, Anisometropia, overview of keratorefractive surgery.  
Chemical injuries, open globe injuries, closed globe injuries and first aid treatment  
including sympathetic injuries.  
Siderosis bulbi, Chalcosis, medico legal aspects.  
Definition and types of blindness.  
Causes of blindness  
Promotion of eye donation  
NPCB, Vision 2020

Eye camps  
Symptomatic disturbances of vision, overview of recent advances in ophthalmology  
Lasers in Ophthalmology  
Enucleation – Indication, technique  
Eye and systemic diseases including AIDS  
Causes of sudden / partial / painless dimension of vision  
Ocular malignancy – retinoblastoma and malignant melanoma of choroid  
Pharmacology  
Chronic side effects of systemic medication, local anaesthetics, viscoelastics, steroid and NSAIDS

## **11. OTORHINOLARYNGOLOGY**

### **Ear**

Introduction to diseases of ear Topics: Diseases of external ear (with special mention on wax, otomycosis, foreign body, keratosis and malignant otitis externa. Diseases of middle ear: Acute otitis media, otitis media with effusion, chronic suppurative otitis media – TTD, AAD, complications of middle ear infections. Deafness – classification, causes, investigations, early detection of deafness in children and rehabilitation (special mention to audiometry, otosclerosis, learning and speech rehabilitation.

Disease of inner ear: Vertigo – classification, causes, investigations and management (special mention of Meniere's disease, positional vertigo and acoustic neuroma)

### **Nose and paranasal sinuses**

Rhinitis – etiology, classification and management (special mention of allergic rhinitis, atrophic rhinitis and allergic fungal rhino-sinusitis.)

Acute sinusitis (in detail), chronic sinusitis (in detail)

Complications of infections of nose and paranasal sinuses

Facio-maxillary injuries (in detail), epistaxis, DNS and nasal polyp (special emphasis on FESS)

Tumours of nose and PNS (special mention of inverted papilloma, naso-pharyngeal angiofibroma and malignancy)

### **Throat**

Tonsils and adenoids (special mention of Quinsy, patches in oral cavity and pharynx)

Neck space infections – Ludwig's angina, retropharyngeal and parapharyngeal abscess

Hoarseness – diagnosis and management

Stridor – diagnosis and management

Malignant lesions of larynx and laryngo-pharynx

Dysphagia – causes, investigations and management (special mention of malignancy)

Foreign bodies of aero-digestive tract – diagnosis, management and complications, endoscopies in ENT

## **12. MEDICINE AND ITS ALLIED SPECIALITIES**

### ***I. Nutrition and nutritional disorders***

- (a) Nutrition requirements
- (b) Protein calorie malnutrition in adults
- (c) Obesity
- (d) Vitamin deficiencies
- (e) Vitamin excess
- (f) Hypo and Hypervitaminosis A & D

## **II. Fluid and electrolyte balance**

- (a) Hypovolemia and dehydration
- (b) Acidosis
- (c) Alkalosis
- (d) Hyponatremia + Hypernatremia
- (e) Hypokalemia + Hyperkalemia

## **III. Disturbance of body temperature**

### **Infections**

Approach to fever and PUO

URI including sinusitis

LRTI – Bronchitis and community acquired pneumonia

Tuberculosis

Gastroenteritis, Cholera, food poisoning

Amoebiasis

Helminthic infections, Bacillary dysentery

Acute viral hepatitis chronic

Viral hepatitis malaria

Filariasis

Chickenpox,

Herpes zoster

Dengue fever,

Chickungunya

Typhoid,

Leptospirosis

Common exanthematous fevers

Skin and soft tissue infections including cellulitis

UTI

HIV AIDS

Sepsis

Rabies

Tetanus

Common fungal infections

Influenza and other respiratory viral infections

Brucellosis

Rickettsia

Meningitis

Common gram negative infections

Common gram positive infections

## **IV. Immunology**

Role of B and T Lymphocytes

Immunoglobulin

Immune reaction

Anaphylaxis, Urticaria, Angioedemas

## **V. Primary Immune deficiency disorders**

## **VI. Genetics**

Clinical Genetics

**VII. Environmental and occupational problems**

- (a) Common poisonings organophosphate and carbamate sedatives, hypnotics, antipsychotics, TCA, Rat poison + paracetamol, formic acid, methyl alcohol, Odollum
- (b) Bites and stings, snake bite, scorpion sting + others
- (c) Alcohol abuse
- (d) Radiation hazards
- (e) Hanging, drowning, electrical injuries

**VIII. Medical disorders in pregnancy**

**IX. CVS**

Coronary circulation  
Coronary artery diseases  
ECG and X-ray interpretation  
Rheumatic fever and RHD  
Congenital heart disorders  
Corpulomonale  
Hypertension and hypertensive heart disease  
Cardiac failure  
Peripheral vascular diseases  
Infective endocarditis  
Cardiomyopathies  
Pericardial disease  
Rhythm disturbances  
DVT + pulmonary embolism

**X. GI system**

Approach to patient with Jaundice  
Approach to patient with Ascites  
Physiology of absorption and investigation procedures  
Acid peptic diseases  
Malabsorption syndrome and tropical sprue  
Drug / toxin induced hepatitis and NASH  
IBS  
Inflammatory bowel disease  
Disease of colon and rectum  
Abdominal tuberculosis  
Chronic liver disease  
Upper GI bleed  
Haemochromatosis and Wilson's disease

**XI. Respiratory system**

Bronchial asthma  
COPD  
Suppurative lung disease  
Pleural diseases  
Bronchogenic carcinoma  
Respiratory failure  
ILD

## ***XII. Haematology***

Bleeding disorders  
Coagulation disorders  
Acute Leukemias  
Chronic Leukemias  
Haemolytic anaemias Fe  
Deficiency anaemia  
Macrocyte and Megaloblastic anaemia  
Plasma cell disorders  
Polycythemia  
Lymphoma  
Aplastic anaemia + Agranulocytosis  
HUS and TTP

## ***XIII. Renal medicine***

Acute renal failure  
Chronic renal failure  
Glomerular disease  
Nephrotic syndrome RFT

## ***XIV. Central nervous system***

Functional  
Anatomy  
Physiology and Investigation  
Migraine and cluster headache  
Seizures and epilepsy Ischemic  
Stroke  
Hemorrhagic stroke  
Approach to a case of vertigo  
Extrapyramidal disorders  
Peripheral Neuropathy  
Spinal cord disorders  
Motor neuron disease and myasthenia  
CNS tuberculosis  
Demyelination  
Cerebellar disorders  
Dementias, Delirium  
Pituitary dysfunction and tumour  
Endocrine disease related to gonads

## ***XV. Geriatrics***

Normal ageing and age-related common problems  
Drug therapy in elderly

## ***XVI. Critical care***

Severe sepsis and shock  
Acute LVF + Acute severe asthma  
Cardiopulmonary resuscitation status  
Epileptics  
Approach to coma  
Management of hepatic encephalopathy

DIC  
Emergency management of acute coronary syndrome  
Bioterrorism and disaster management

***XVII. Rheumatology***

Rheumatoid arthritis  
SLE  
Spondyloarthropathies  
Degenerative joint disorders  
Approach to chronic backache  
Inflammatory muscle disease

***XVIII. Endocrine disease***

Diabetes Mellitus  
Hypothyroidism  
Hyperthyroidism  
Thyroiditis and other thyroid disorders  
Parathyroid disorders + Tetany  
Metabolic bone disease + Osteoporosis + Vitamin deficiency  
Cushings disease + syndrome  
Addison's disease

***XIX. Pain and principles of palliative care***

Assessment and treatment of chronic pain

***XX. Clinical pharmacy and therapeutics***

General principles of drug therapy  
Common drug interactions  
Common adverse reactions  
Monitoring drug therapy  
Rational prescription writing

**13. PSYCHIATRY**

Classification of psychiatric disorders  
Aetiological factors in psychiatric disorders  
Clinical interview and mental state examination  
Organic brain syndrome  
Substance abuse  
Bipolar disorders  
Depressive disorders  
Schizophrenia  
Major manifestation of psychiatric illness  
Treatments used in psychiatric illness  
Neurotic, stress related and somatoform disorders  
Sleep disorders  
Legal aspects of psychiatry

**14. RADIOLOGY**

Production of X-rays  
Biological changes  
Skeletal radiology chest and Mediastinum

Gastrointestinal system  
Hepatobiliary system  
Genitourinary system  
Neuroimaging modalities  
Emergency radiology

## **15. DERMATOLOGY**

Infections of skin  
Eczematous dermatitis  
Bullous skin lesion collagen disorder  
Pigmentary disturbances  
Maculopapular,  
Squamous lesion  
Neoplastic lesions  
Lesions of skin appendages  
Gastrogenic disorders  
Leprosy and national leprosy control programmes

## **16. SURGERY AND ITS ALLIED SPECIALITIES**

Principles of Surgery, genetics, history of surgery, surgical ethics

### ***Trauma***

Metabolic response to trauma  
Wound healing and complications  
Critically injured patient including Triage  
ATLS, poly trauma, disaster management  
Different types of wounds and their management  
Shock: Types, pathogenesis and management, Haemorrhage, Haemostasis, Blood transfusion, Burns  
Fluid and electrolyte balance, nutritional support  
Pre-operative and post-operative care – emphasis on intensive care and high dependency sterilization  
Surgical sepsis – specific infection, Nosocomial infection, antibiotic policy  
Immunology and organ transplantation, HIV and surgeon, Hepatitis B  
Principles of imaging techniques  
Suture materials and anastomosis  
Skin and soft tissues  
Normal structure – Ulcers, sinus and fistula, cysts and benign tumours  
Pre-malignant conditions, malignant tumours, skin cover  
Arteries - Applied anatomy and physiology, investigation, trauma, acute ischaemia, chronic ischaemia, Arterial aneurysms and A. V. fistula, amputations  
Veins - Applied anatomy and physiology, varicose veins and venous ulcers, DVT and superficial thrombophlebitis  
Lymphatics and lymph nodes - Applied Anatomy and physiology, lymph oedema – primary, secondary, lymph cyst – cystic hygroma  
Inflammations – Lymphangitis, lymphadenitis, malignant neoplasms – lymphomas  
Head and neck - Head injuries, facio maxillary injuries, salivary glands, mouth and face, cleft lip, cleft palate, oral cancers and premalignant conditions, jaw tumours, ranula, misc-Branchial cysts, arid fistula, carotid body tumours.  
Thyroid and parathyroid thyroglossal cyst and fistula Breast - Applied anatomy and physiology, investigation, fibrocystic diseases, inflammation, tumours

Chest – diaphragm, mediastinum, chest injuries: Thoracic outlet compression syndrome, heart and pericardium, pleura and lungs.

Gastrointestinal tract – oesophagus, anatomy and physiology, congenital anomalies, dysphagia, achalasia and other motility disorders, oesophageal perforation, gastrooesophageal reflux diseases, tumours.

Stomach and Duodenum – Anatomy, physiology, embryology, congenital, peptic ulcer disease (APD), Upper GI haemorrhage, tumours, pyloric stenosis

Liver – Applied anatomy and physiology, trauma, liver abscess, cysts of the liver, portal hypertension, tumours, principles and management of obstructive jaundice.

Biliary system – congenital disorders, gall stone, cholecystitis, Cholangiocarcinoma

Spleen – Anatomy and physiology, trauma – splenic conservation, indication for splenectomy

Pancreas – Anatomy, development and physiology, congenital anomalies, acute pancreatitis, chronic pancreatitis including calcific pancreatitis, tumours, surgical jaundice

Vermiform appendix – Anatomy, appendicitis, neoplasm

Small and large intestine – Anatomy, physiology, embryology, congenital disorders, inflammatory bowel disease including typhoid, tuberculosis, tumours, intestinal obstruction.

Rectum and anal canal – ano-rectal anomalies, prolapse, haemorrhoids, ano-rectal sepsis, fissure, fistula, tumour

Miscellaneous – Abdominal trauma, minimally invasive surgery, peritoneum and retroperitoneum, hernia and abdominal wall, mesentery, surgical audit and day care surgery

Genitourinary system – congenital conditions, trauma, infections, stones, hydronephrosis, tumours of kidney, tumours of bladder, retention of urinary bladder, haematuria, torsion, undescended testis, epididymo-orchitis, carcinoma penis, phimosis, prostate testicular tumours, benign prostatic hypertrophy, carcinoma prostate, adrenal gland surgery pheochromocytoma and conn syndrome.

## **17. ORTHOPAEDICS**

Traumatology

Definition of a fracture and types of fracture and general principles of management of fracture

Complications of fracture – open fractures and pathological fracture

Fracture clavicle, fracture neck of humerus and shoulder dislocation

Fracture humerus (Shaft) and supracondylar fracture

Intercondylar fracture and Olecranon fracture

Elbow dislocation and forearm fracture

Monteggia fracture and Galeazzi's fracture

Colle's fracture and fracture scaphoid

Fracture spine and traumatic paraplegia

Fracture pelvis and hip fracture – fracture of femur

Hip dislocation and fracture shaft of femur

Meniscus tear and fracture patella

Leg fracture

Ankle injuries – Pott's fracture

Hand injuries

Extensor mechanism injuries of knee

Fracture of tarsal bones

Cold orthopaedics

CTEV and flat foot

CDH

Torticollis, congenital pseudoarthrosis of tibia and arthrogryphosis multiplex congenita

osteomyelitis septic arthritis tuberculosis – spine, hip, knee, elbow, wrist and other sites

Perthe's disease and slipped upper femoral epiphysis

Rickets and osteomalacia

Rheumatoid arthritis and ankylosing spondylitis

Intervertebral disc prolapse

Scoliosis and spondylothesis

Bone, tumour, osteochondroma, simple bone cyst, aneurysmal bone cyst and

enchondroma, giant cell tumour, osteosarcoma and Ewing's sarcoma,

Chondrosarcoma, multiple myeloma, metastatic bone diseases and osteogenesis

imperfecta

Nerve injuries – Radial nerve, ulnar nerve, sciatic nerve, amputations and osteoarthritis

hip, knee, cerebral palsy

## **18. PHYSICAL MEDICINE AND REHABILITATION**

Introduction to physical medicine and rehabilitation disability process and progression of disabilities concept of Impairment / disability and hard cap

Principles of physical therapy – various modalities and therapeutic exercises

Principles of occupational therapy its application in the rehabilitation of various disabilities

Principles of prosthetics and rehabilitation aids their application in the rehabilitation of disabilities

Disability evaluation – principles people with disabilities Act – 1995

Pain management principles

Principles of rehabilitation of people with disabilities

To understand the basic principles of disability conclusion and for certification purposes

To get exposed to the potentials of socio-vocation rehabilitation of the various describing conditions in the light of the 1995 Act people with disabilities (equal opportunities etc)

Act 1995

To get oriented to basic principles of community based rehabilitation of people with disabilities

## **19. RADIOTHERAPY**

Cancer epidemiology and possible etiological factors, screening for cancer

Principles of cancer chemotherapy and chemotherapeutic agents used in the management of cancer

Hormone treatment in cancer

Principles of radiation oncology, radioactive sources – Teletherapy, Brachial therapy and nuclear medicine

Methods of radiotherapy and recent advances

Common malignancies, diagnosis and treatment

## **20. ANAESTHESIOLOGY**

Introduction – scope of Anaesthesiology

Pre-anaesthetic check-up premedication

General anaesthesia – Basal anaesthesia triads of anaesthesia Inhalational agents

Intravenous anaesthetic agents

Regional analgesia – subarachnoid and epidural analgesia, other techniques of regional analgesia and agents used.

Equipments in anaesthesia and methods of oxygen therapy

Intravenous fluid therapy, intraoperative monitoring  
Complication in anaesthesia and post-operative period  
Cardio-pulmonary and cerebral resuscitation, basic cardiac life support (BCLS), advanced cardiac life support (ACLS)  
Methods of pain relief

## **21. PAEDIATRIC**

### ***Infectious diseases***

Poliomyelitis, measles, diphtheria, tetanus, childhood tuberculosis, typhoid fever, HIV infection, dengue and chikungunya, viral haemorrhagic fevers and malaria. Pertussis, mumps, rubella, influenza, H1N1, seasonal epidemics

### ***Gastrointestinal tract and liver disorder***

Diarrhoeal diseases, hepatitis and hepatic failure, cirrhosis liver and portal hypertension. Helminthic infestations.

CVS - Congenital heart disease, rheumatic fever and RHD, CCF, hypertension, infective endocarditis.

Respiratory system - Childhood asthma, acute bronchiolitis, pneumonias in children suppurative lung disease, smoking and environmental pollution, Croup syndromes

CNS - Cerebral palsy, mental retardation, meningitis and encephalitis, seizure disorders and febrile seizures, microcephaly and hydrocephalus, floppy infant, therapeutics

Treatment of epilepsy, GBS, ADEM

Haemopoietic system - anaemia in children, bleeding disorders

Disorders of kidney - acute nephritis, nephrotic syndrome, renal failure, urinary tract infection

Endocrine disorder - diabetes mellitus, thyroid disorders, short stature and intersex, ambiguous genitalia, precocious puberty

Connective tissue disorders - JRA, other vasculitis syndromes including SLE and HSP, Kawasaki disease

Malignancies in children - leukemia, lymphomas, neuroblastoma, solid tumours, CNS tumours, new born respiratory distress in newborn, perinatal diagnosis and treatment, sepsis in newborn, assessment and management of asphyxia, thermoregulation in newborn congenital malformations, disorders of gestation and low birth weight, neonatal resuscitation, neonatal jaundice, sepsis, BFHI and feeding, normal variations intrauterine infections, neonatal seizures

Behavioural problems in children - Enuresis, thumb sucking, breath holding, dyslexia, specific learning disorders, child rearing problems like infantile colic, growing pain etc

Common poisoning and accidents in children - Kerosene, Dhatura, paracetamol and iron, snake bite, burns etc.

Nutrition - BFHI, IYCF Nutritional assessment, SAM, specific vitamin deficiency disorders

National programmes - IMNCI, RCH3, NRHM, Vitamin A, Iodine deficiency, IDSP, ARI, ADD, AFP & PPI

Common chromosomal disorders and genetic counselling - Down's syndrome, Turner syndrome.

Fragile X and Genetic counselling,

Innocent problems causing undue parental anxiety breath holding spell, evening colic, growing pain etc.

## **22. OBSTETRICS AND GYNAECOLOGY**

Pregnancy - Diagnosis, Clinical features, differential diagnosis, relevant tests and the principles underlying the tests

Antenatal care: objectives of antenatal care routine antenatal check up, Assessment of period of gestation, obstetric examination, general examination, other system examination

Clinical monitoring of maternal and fetal well being, detect abnormality

Common problems in Pregnancy - Oedema, Pruritis, heart burn, piles, varicose veins, clothing and foot ware, exercise, sex, hygiene, nutrition, rest, drug in pregnancy

Drugs: Immunisation, drug prescription relevant blood examination, urine examination and interpretation of the results and physiological changes in pregnancy

Ultrasound examination

Fetal surveillance

Normal Labour

Physiology of onset of labor, fetal skull and pelvis

Mechanism of labour

Labour monitoring partogram, Labour analgesia

Induction of labor (various methods of induction – merits and demerits)

Acceleration of labor and drugs used in labor

Delivery: stages of labour, management of first of labour

Management of second stage of labour (vaginal delivery with episiotomy)

Management of third stage of labor:

Active management of third stage of labor

Prevention of PPH, Management of PPH

Other complications of third stage of labor and management

Abnormal labor:

Hypertonic contractions, hypotonic contractions and incoordinate uterine action

CPD, obstructed labour

Caesarean section (indications, complications)

Vaginal delivery after caesarean

Abnormal presentations and management: Occipito posterior position, Breech presentation, transverse lie, brow/face presentation

Abortions: Types, aetiopathology, investigations and management

Recurrent pregnancy loss: causes, investigations and management

Ectopic pregnancy: aetiopathology, early diagnosis, late diagnosis, clinical features, differential diagnosis and principles of management (conservative, medical and surgical)

Trophoblastic diseases: aetiopathology, classification, clinical features, diagnosis, management, long term follow up and complications

Hyperemesis gravidarum: definition, aetiopathology, clinical features advice and drug therapy

Abnormal puerperium: cause clinical presentation investigations and management

Abnormal pregnancy:

Multiple pregnancies

Intrauterine death

PROM (Premature rupture of membranes)

Preterm labor

Post datism

IUGR

Elderly primi, grand multipara, Rh negative, Gynaecological disorders complicating pregnancy

Fetus and newborn:

Fetal distress: definition, diagnosis and management neonatal resuscitation, care of newborn, examination of newborn and identifying congenital abnormalities, jaundice in newborn

Breast feeding

Contraception: various methods and devices, selection of patients, counselling of the Couples, follow up, side effects, complications, and failure rates

Medical termination of pregnancy:  
MTP Act, Legal and ethical aspects, methods, complications and management

Operative obstetrics

Indication and steps of the procedure of episiotomy

Vacuum extraction, forceps delivery

Instrumental evacuation

Caesarean section

Assisted breech delivery, breech extraction

External cephalic version, internal podalic version

Cervical encirclage extra amniotic instillation and manual removal of placenta

Ultrasound MRI in obstetrics: diagnostic and interventional

Fetomaternal medicine: Screening for congenital abnormalities, blood tests (maternal and fetal) Amniotic fluid analysis, fetal tissue biopsy

Medical disorders in pregnancy:

Hypertensive disorders of pregnancy

Heart disease complicating pregnancy

Anaemia in pregnancy

Diabetes in pregnancy

UTI, hepatitis, TB, chest disease complicating pregnancy

Veneral disease, infections, HIV complicating pregnancy

Thyroid disorders, immunological disorders like SLE, ACLA, and thrombophilia complicating pregnancy

Jaundice in pregnancy Haemorrhage and coagulation disorders in obstetrics and immunology in pregnancy

Dummy pelvis, Mannequins resuscitation of newborn

### ***Gynaecology***

Abnormal menstruation:

Normal menstrual cycle – physiology of menstruation

Abnormal menstruation – definition, classification, clinical features and principles of investigations, diagnosis and management

Amenorrhoea: Definition, classification, causes, investigations and management

Dysfunctional uterine bleeding and postmenopausal bleeding: Definition, causes, investigations and management

Hormonal therapy: when to give, when not to give, type of hormones with dosage, duration of hormonal therapy, complications and contraindications for hormonal therapy

Infertility: Types, definition, causes, counselling, examination of couple and essential investigations, ART: various methods of assisted reproductive techniques, setting up of ART lab

Genital injuries including fistulae: Causes, diagnosis, clinical features, and principles of management and prevention

Genital infections: STDs, PID, HIV infection and AIDS, genital TB – aetiopathology, diagnosis and principles of management

Neoplasms of genital tract – Benign and malignant, aetiopathology, clinical feature, diagnosis, principles of management and cancer screening and preventive aspects

Abnormal vaginal discharge: causes, clinical examination, diagnosis, investigation and management. Counselling regarding prevention of STD's  
Endometriosis: aetiopathology, classification, clinical features, diagnosis and management, contraception  
Operative gynaecology: Indications, complications of D&C, cervical biopsy  
Medical termination of pregnancy, evacuation of incomplete Abortion tubal ligation, IUCD insertion  
Abnormal hysterectomy  
Vaginal hysterectomy, sling procedures  
Ovarian tumours  
Radical procedure for malignancy  
Correction of enterocele, diagnosis and operation for vault prolapse  
Endoscopy in gynaecological practice  
Laparoscopy: Principles, indications, instrumentation, procedure, complication, scope of laparoscopy in gynaecological practices  
Hysteroscopy: Principles, indications, instrumentation, procedure, steps in present gynaecological practices and complications.  
Colposcopy: Principles instrument, procedure  
Endocrinology  
Post operative management:  
Routine management of postoperative patient like IV fluids, drugs, antibiotics, ambulation, nutrition  
Management of fever, skin wound complications, complications like burst abdomen, intraperitoneal bleeding and intra peritoneal collections, instruments, specimens etc.  
Acute abdomen  
Adolescent medicine (Gynaecology)  
Analgesia  
Urological problems

### **23. FAMILY WELFARE**

Applied anatomy of mechanical methods for prevention of conception  
In female – Barrier contraception, female condom, IUCD, tubectomy etc.  
In male – Condom, vasectomy (NSV) etc  
Physiology, endocrine and regulation of reproduction in the female. The safe period-rhythm method of contraception, principle of use of oral contraceptives.  
Pharmacology:  
Mode of action and administration of chemical contraceptives and oral contraceptive  
Contraindications for administration of contraceptives. Side effects of contraceptives  
Community Medicine: The need for Family Welfare Planning, organization of Family Planning service, Health Education in relating to Family Planning, Nutrition, Physiological need of the mother, the child and the family Demography and the vital statistics  
Pediatrics: Problems of child health in relation to large family: organization of pediatric services, nutritional problems of mother and child, childhood diseases due to over crowding.

***NOTE: - It may be noted that apart from the topics detailed above, questions from other topics prescribed for the educational qualification of the post may also appear in the question paper. There is no undertaking that all the topics above may be covered in the question paper.***