upsc.medcampus.io

UPSC CSE

MEDICAL SCIENCES OPTIONAL SYLLABUS BOOKLET

Reference: upsc.gov.in

PAPER I

Anatomy

Physiology

Biochemistry

Pathology

Microbiology

Pharmacology

Forensic Medicine and Toxicology

ANATOMY

Human Anatomy

1. Applied anatomy including blood and nerve supply of upper and lower limbs and joints of shoulder, hip and knee.
2. Gross anatomy, blood supply and lymphatic drainage of tongue, thyroid, mammary gland, stomach, liver, prostate, gonads and uterus
3. Applied anatomy of diaphragm, perineum and inguinal region.
4. Clinical anatomy of kidney, urinary bladder, uterine tubes, vas deferens.

Embryology

1. Placenta and placental barrier
2. Development of

   a) heart

   b) gut

   c) kidney

   d) uterus

   e) ovary

   f) testis and their common congenital abnormalities.

Neuroanatomy

Central and peripheral autonomic nervous system: Gross and clinical anatomy of ventricles of brain, circulation of cerebrospinal fluid; Neural pathways and lesions of cutaneous sensations, hearing and vision; Cranial nerves, distribution and clinical significance; Components of autonomic nervous system.

PHYSIOLOGY

Nerve muscle Physiology

- Conduction and transmission of impulse
- Mechanism of contraction
- Neuromuscular transmission
- Reflexes
- Control of equilibrium, posture and muscle tone

Neurophysiology

- Descending pathways
- Functions of cerebellum
- Basal ganglia
- Physiology of sleep and consciousness

Endocrine Physiology

- Mechanism of action of hormones (Formation, secretion, transport, metabolism)
- Function and regulation of secretion of pancreas and pituitary gland

Physiology of Reproductive System

- Pregnancy, menstrual cycle, lactation

Cardiovascular Physiology

- Development, regulation and fate of blood cells.
- Cardiac output
- Blood pressure,
- Regulation of cardiovascular functions.

BIOCHEMISTRY

Organ function tests-liver, kidney, thyroid

Protein synthesis

Vitamins and minerals

Tools in Biochemistry

- Restriction fragment length polymorphism (RFLP).
- Polymerase chain reaction (PCR)
- Radio - immunoassays (RIA)

PATHOLOGY

- Inflammation and repair,
- Neoplasia
  a) Differentiation between benign, malignant, primary and metastatic malignancies
  b) Pathogenesis and histopathology of
     i) bronchogenic carcinoma
     ii) carcinoma breast
     iii) oral cancer
     iv) cancer cervix
     v) leukemia
- Pathogenesis and histopathology of rheumatic and ischemic heart disease
- Etiology, pathogenesis and histopathology of
  a) cirrhosis liver

b) glomerulonephritis

c) tuberculosis

d) acute osteomyelitis.

MICROBIOLOGY

Immunology

- Humoral and cell mediated immunity

Diseases caused by and laboratory diagnosis of

BACTERIA

- Meningococcus
- Salmonella
- Shigella

VIRUS

- Herpes
- Dengue
- Polio
- HIV/AIDS

PARASITE

- Malaria
- E. Histolytica
- Giardia

FUNGI

- Candida
- Cryptococcus
- Aspergillus

PHARMACOLOGY

Mechanism of action and side effects of the following drugs

- Antipyretics and analgesics
- Antibiotics
- Antimalarial drugs
- Anti kala-azar
- Antidiabetics
- Antihypertensive
- Antidiuretics
- General and cardiac vasodilators
- Antiviral
- Antiparasitic
- Antifungal
- Immunosuppressant
- Anticancer agents

FORENSIC MEDICINE AND TOXICOLOGY

- Forensic examination of injuries and wounds;
- Examination of blood and seminal stains;
- Toxicology
- Asphyxia (Hanging, Drowning)
- Burns
- Identification-(DNA and finger print study)

PAPER II

General Medicine

PEDIATRICS

General Surgery (Including Orthopedics)

Obstetrics & Gynecology Including Family Planning

Community Medicine (Preventive & Social Medicine)

General Medicine

Infectious Diseases (Etiology, Clinical features, diagnosis and Management including preventive measures)

- Typhoid
- Rabies
- AIDS
- Dengue
- Kala-azar
- Japanese Encephalitis
- Tuberculosis

Medicine Part I (Etiology, Clinical features, diagnosis and Management)

- Ischemic heart disease
- Pulmonary embolism
- Bronchial asthma
- Pleural effusion

Medicine Part II (Etiology, Clinical features, diagnosis and Management)

- Malabsorption syndromes
- Acid peptic diseases
- Viral hepatitis
- Cirrhosis of liver

Medicine Part III (Etiology, Clinical features, diagnosis and Management)

- Glomerulonephritis
- Pyelonephritis
- Renal failure
- Nephrotic syndrome
- Renovascular hypertension

Medicine Part IV

- Complications of diabetes mellitus
- Coagulation disorders,
- Leukemia
- Hypo and hyper thyrodism
- Meningitis and Encephalitis.

Medical Imaging

- Ultrasound
- Echocardiogram
- CT scan
- MRI.

Dermatology

- Psoriasis
- Allergic dermatitis
- Scabies
- Eczema
- Vitiligo
- Steven Johnson's syndrome
- Lichen Planus.

Psychiatry

- Anxiety disorders
- Depressive disorders
- Schizophrenia
- Electroconvulsive therapy

PEDIATRICS

- Immunization,
- Baby friendly hospital
- Congenital cyanotic heart disease
- Respiratory distress syndrome
- Bronchopneumonia
- Kernicterus
- IMNCI classification and management
- PEM grading and management
- Acute Respiratory Insufficiency
- Diarrheal diseases

GENERAL SURGERY (INCLUDING ORTHOPEDICS)

(Clinical features, causes, diagnosis and principles of management)

- Cleft lip and Cleft palate
- Laryngeal tumor
- Oral and Esophageal tumor
- Peripheral arterial diseases
- Varicose veins
- Coarctation of aorta
- Tumors of Thyroid
- Adrenal Glands
- Abscess, cancer, Fibroadenoma and adenosis of breast
- Bleeding peptic ulcer
- Tuberculosis of bowel
- Ulcerative colitis
- Cancer stomach

- Renal mass
- Cancer Prostate
- Hemothorax
- Stones of Gall bladder
- Kidney
- Ureter
- Urinary Bladder.
- Rectum
- Anus and Anal canal
- Gall bladder and Bile ducts
- Splenomegaly
- Cholecystitis
- Portal hypertension
- Liver abscess
- Peritonitis
- Carcinoma head of pancreas.
- Fractures of spine
- Colles' fracture
- Bone tumors.
- Endoscopy
- Laparoscopic Surgery

OBSTETRICS AND GYNECOLOGY INCLUDING FAMILY PLANNING:

Obstetrics

- Diagnosis of pregnancy
- Labour management

- Labour management
  a) Complications of 3rd stage of labour
  b) Antepartum and postpartum hemorrhage
  c) Resuscitation of the newborn
  d) Management of abnormal lie and difficult labour
  e) Management of small for date or premature newborn.
- Diagnosis and management of
  a) Anemia
  b) Preeclampsia and Toxemias of pregnancy
  c) Management of Post-menopausal Syndrome

Gynecology

- Cancer cervix
- Leucorrhoea
- Pelvic pain
- Infertility
- Dysfunctional uterine bleeding (DUB)
- Amenorrhoea
- Fibroid
- Prolapse of uterus.

Family planning

- Intra-uterine device
- OC pills
- Tubectomy and vasectomy
- Medical termination of pregnancy including legal aspects.

COMMUNITY MEDICINE (PREVENTIVE AND SOCIAL MEDICINE):

- Principles, methods, approach and measurements of Epidemiology
- Nutrition, nutritional diseases / disorders & Nutrition Programmes
- Health information Collection, Analysis and Presentation.
- Objectives, components and critical analysis of National Programmes for control/eradication of:
  a) Malaria
  b) Kala-azar
  c) Filaria
  d) Tuberculosis,
  e) HIV/AIDS
  f) STDs
  g) Dengue
- Critical appraisal of Health care delivery system.
- Health management and administration: Techniques, Tools, Programme Implementation and Evaluation.
- Objective, Component, Goals and Status of
  a) Reproductive and Child Health
  b) National Rural Health Mission
  c) Millennium Development Goals
- Management of hospital and industrial waste.