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## Original Pathology Syllabus Given By CPSP

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## SYLLABUS

Candidates for the Fellowship of the College are expected to have a sound working knowledge of the structure and functions of the human body and the various mechanisms whereby these structures and functions are altered leading to diseased states. The emphasis in the FCPS Part-I examinations is on comprehension of the various mechanisms by which the body works and adjusts to external and internal changes. Concepts of the integration and interrelationship of various parts of the body are to be given more importance than finer details of structure and function.

The outline of various topics given in this syllabus is a guide to what at the moment are considered to be important topics which the candidate is expected to know. This is to help both the candidate and the examiner in defining the minimum boundaries of FCPS Part-I examination.

### PAPER-I

#### I. ANATOMY

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1. Features and Functional Anatomy:
  - Bone
  - Muscle
  - Joints
  - Major blood vessels
2. Embryology - General aspects.
3. Histology - General Structure:
  - Types of tissue
  - Epithelia
  - Muscles
  - Nerves
  - Blood vessels
  - Fibro fatty tissue
  - Lymph glands



4. Brain and spinal cord:
  - Gross structure
  - Spinal nerves - origin and distribution
  - Cranial nerves
  - Vertebral Column - Features
5. Head and Neck - Structures.
6. Viscera: Gross structure, Blood and Nerve Supply:
  - Heart and Pericardium
  - Lung, Pleura and Mediastinum
  - Kidney
  - Liver
7. Anatomical outline, blood supply and innervation of respiratory tract.
8. Endocrine glands - anatomical structure  
Pituitary, Thyroid, parathyroid and adrenal glands.

## **II. PHYSIOLOGY AND BIOCHEMISTRY**

1. General Physiology:
  - Components of cell and cytoplasm with their functions (in general) and transport across cell membrane.
  - Nerve action potential, muscles contraction  
Classification and properties of nerve fibres
  - Receptors, types, properties and functions
  - Somatic sensation - Transmission of pain
  - Function of motor and sensory areas, Pain Pathway; Cerebrospinal Fluid (CSF) - formation, functions, drainage
  - Autonomic nervous system (outflow and responses of effected organs)
  - General properties and composition of blood



- Normal counts and functions of RBCs, WBCs, platelets
  - Mechanism of homeostatic coagulation factors and their actions
  - Blood groups (types, antigens, antibodies, phenotype, genotypes and significance)
  - Conducting tissues of heart (generation and propagation of cardiac impulse). Control of cardiac output
  - Cardiac cycle (pressure, volumes, valvular changes)
  - Blood pressure and its regulations (general)
  - Respiratory and non-respiratory function of respiratory tract. Regulation of Respiration, Transport of gasses
  - Body fluids, compartments and regulations of osmotic equilibrium especially pleural and peritoneal
  - Regulation of E.C.F. and blood volume and flow - Peripheral circulation
  - General functions of kidney
  - Regulation of body temperature
2. Pharmacology:
- General principles of rational drug therapy, Clinical pharmacokinetics
  - Adverse reactions of common drugs
3. Biochemistry:
- Requisites of a balanced diet
  - General principles of electrolyte balance
  - Role and function of endocrine hormones - feed back mechanism
  - Metabolism of carbohydrate, proteins, fats and vitamins - Metabolic pathway



### III. PATHOLOGY INCLUDING MICROBIOLOGY

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1. Effects of injury on cell by physical, chemical and biological agents.
  2. Inflammation:
    - Acute
    - Chronic including granulomatous
  3. Regeneration and Repair
  4. Metabolic Response to Trauma
  5. Disturbance of homeostatic mechanism
    - Haemorrhage and Shock - mechanism and types
    - Oedema
    - Disturbance of fluids and electrolytes
  6. Thrombosis and embolism, infarction and gangrene
  7. Disorders of growth - adaptation, atrophy, hypertrophy, hyperplasia
  8. Carcinogens and pre-malignant lesions
  9. Neoplasia: General classification & spread of tumour
  10. General aspects of tumour markers
  11. General characteristics of bacteria, viruses, Chlamydia, reckettsia, parasites and fungi
  12. Immunology and immune system: General principle
  13. Medical genetics - basic concept
  14. Interpretation of routine biochemical tests e.g. liver function test, glucose, urea, creatinine
  15. Nutritional disease: deficiency of vitamins and minerals
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#### **IV. RESEARCH AND BIostatISTICS - BASIC CONCEPTS**

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##### **Epidemiology:**

- An introduction to epidemiology and its role in understanding distribution and determinants of disease.
- Measures of disease occurrence
- Screening

##### **Biostatistics:**

- Introduction to biostatistics
- Data and its kinds
- Summarization of data
- Normal distribution
- Point and interval estimation and probability
- Hypothesis testing, significance level and power

#### **V. BEHAVIOURAL SCIENCE AND MEDICAL ETHICS - GENERAL PRINCIPLES**

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- Medical ethics
- Communication skills including Doctor-Patient relationship and counseling
- Psycho social aspect of general healthcare



**PAPER-II**  
**PATHOLOGY (FCPS-I)****I. GENERAL PATHOLOGY**

Environmental factors for causation of disease

**Gene defects:**

- Single gene and polygenic defects
- Transmission pattern
- Cytogenetic disorders

**Neoplasia - etiology, risk factors and carcinogenic agents:**

- Tumour immunity
- Grading and staging of malignant tumour
- Laboratory diagnosis of cancer

**General aspects of infectious diseases**

**Disorders of pigment metabolism**

**II. HISTOLOGY**

- Gastrointestinal system, liver, biliary tract, pancreas
- Heart and blood vessels
- Respiratory tract
- Female and male genital tract
- Kidney, ureter and urinary bladder
- Breast
- Endocrine system
- Skin and muscles skeletal system
- Nervous system





### **III. CHEMICAL PATHOLOGY**

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- Hyperlipidaemia; Classification and investigation
- Metabolic disorders
- Hyperglycemia, Hypoglycemia. The diagnosis of Diabetes Mellitus
- Thyroid Function Tests for Hypo and Hyperthyroidism
- Cortisol pathway. Hypo and Hyper cortisolism and their investigations
- Pituitary disorders
- Endocrine investigations of infertility
- Markers of IHD
- Metabolic bone disease - hypo and hypercalcaemia
- Renal Function Tests
- LFTs
- Water and electrolyte disorder
- Acid-based disorders

### **IV. HAEMATOLOGY**

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#### **Haemopoiesis:**

##### *Disorders of RBCs*

- Hypochromic and Megaloblastic anaemias
- Haemolytic anaemias - inherited and acquired
- Aplastic anaemias

##### **Disorders of WBCs:**

- Leucopenia
- Leucocytosis, Leukaemoid reactions
- Leucoerythroblastosis
- Lymphocytosis, infectious mononucleosis
- Leukemias - acute and chronic
- Myeloproliferative disorders

**Disorders of Haemostasis:**

- Vascular bleeding disorders
- Platelet bleeding disorders
- Thrombocytopenia: immune, non-immune
- Platelet function disorders
- Coagulation disorders: inherited, aquired

**Blood Transfusion:**

- Indications for transfusion of blood and its component
- Complications of blood transfusion
- Rh incompatibility

**Haematological manifestations of common diseases****VI. MICROBIOLOGY****General Bacteriology :**

- Bacterial Cell Structure, Basis of Classification
- Principles of Staining Methods - Gram, AFB

**Pathogenesis of bacterial diseases:**

- Normal flora and infections
- Host: Parasite relationship

**Methods of identification and Isolation of microbial agents:**

- Gram-positive organisms
- Gram-negative organisms
- Mycobacteria
- Fungi: candida, aspergillus
- Viruses

**Parasitology:**

- Haemoparasites - malaria, filaria
- Intestinal
- Unicellular - giardia, entamoeba
- Multicellular - nematode, cestodes

**Sterilization and disinfection****Epidemiology of hospital acquired infections**

## **VII. IMMUNOPATHOLOGY**

Cells of the immune system

Mechanisms of immunoglobulin mediated injury

Hypersensitivity reaction:

- Anaphylactic, antibody dependent, immune complex mediated, cell mediated

Auto-immune diseases

Immunodeficiency diseases:

- Primary immunodeficiency states
- Secondary Immunodeficiency - AIDS



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