

**Curriculum FCPS Part-I**  
**Topic-wise distribution of number**

**Paper-I**

Topic	Total number of questions 50
i. Neuroanatomy	17
ii. Neurophysiology	17
iii. Anatomy and Physiology of Endocrine System	06
iv. Cellular Structure (Neurohistology) and Neuroembriology	05
v. Genetics	05

**Paper-II**

Topic	Total number of questions 50
i. Pathology	(20)
● <i>Basic Pathology</i>	02
Cellular Response to Injury, Free Radical Induced Cell Injury, Definition of Cell Necrosis, Definition of Apoptosis, Definition of Inflammation, Chemical Mediators of Inflammation, mutation, Mendelian Disorders, Multifactorial Inheritance, Cytogenetic Disorders	
● <i>Neuropathology</i>	12
● <i>Pathology of Endocrine Disorders and Neuroimmunology</i>	06
Pathology of endocrine glands including hyperthyroidism, hypothyroidism, hyperpituitarism, hypopituitarism, hyperparathyroidism, hypoparathyroidism, hypoadrenalism, hyperadrenalism related to psychiatric disorders, diabetes and neuroimmunology	

Topic	Total number of questions 50
<b>ii. Psychopharmacology</b>	(20)
● <i>General Principles</i>	03
● <i>Pharmacokinetics</i>	04
● <i>Pharmacodynamics</i>	04
● <i>Classification of Psychotropic Drugs</i>	01
● <i>Adverse Effects</i>	06
● <i>Drug Interaction</i>	02
<b>iii. Biochemistry</b>	(10)
● <i>Basic Biochemistry</i>	03
● <i>Neurochemistry</i>	05
● <i>Metabolism</i>	02

### Paper-III

Topic	Total number of questions 50
<b>i. Basic psychiatry</b>	(17)
● <i>Classification of Psychiatric Disorders</i>	01
● <i>Common Aetiology of Psychiatric Disorders</i>	01
● <i>Presenting Problems and Symptoms and Signs (Phenomenology) of Common Psychiatric Disorders</i>	14
● <i>Psychiatric History Taking and Mental State Examination</i>	01
<b>ii. Neurological Diseases Related to Psychiatry</b>	(12)
● <i>Seizure Disorder</i>	01
● <i>Headache</i>	01
● <i>Vestibular Disorders</i>	01

**Paper-III (Cont'd)**

<b>Topic</b>	<b>Total number of questions 50</b>
● <i>Neuroinflammatory Disorders</i>	01
● <i>Neurodevelopmental Disorders</i>	01
● <i>Neurodegenerative Disorders</i>	02
● <i>Intracranial Mass Lesion, Raised Intracranial Pressure</i>	01
● <i>Infections of Nervous System</i>	01
● <i>Disorders of Cerebeller Function</i>	01
● <i>Disorders of Peripheral Nerves</i>	01
● <i>Cerebrovascular Disease (CVD)</i>	01
<b>iii. Endocrine Disorders related to Psychiatry</b>	<b>(04)</b>
● <i>Disorders of Thyroid Gland</i>	01
● <i>Disorders of Reproductive System</i>	01
● <i>Disorders of Adrenal Glands</i>	
● <i>Disorders of Hypothalamus and Pituitary Glands</i>	01
● <i>Disorders of Endocrine Pancreas and Parathyroid Gland</i>	01
<b>iv. Nutritional Disorder related to Psychiatry</b>	<b>(02)</b>
● <i>Under-Nutrition and Obesity</i>	01
● <i>Vitamin Deficiency Disease and its Relation to psychiatric Disorders</i>	01

Paper-III (Cont'd)

Topic	Total number of questions 50
<b>v. Behavioral Sciences</b>	(10)
● <i>Definition of Behavioral Sciences and Social Sciences</i>	01
● <i>Behavior and its Determinants :</i>	
<i>Factors Related to Brain (cortical lobar functions)</i>	02
<i>Factors Related to Endocrine System (thyroid, adrenal and pituitary gland)</i>	02
<i>Psychosocial Factors</i>	01
● <i>Concept of Health and Mental Health</i>	01
● <i>Definition and Types of Emotion and Concept of Motivation</i>	01
● <i>Doctor Patient Relationship, Medical Ethics, Good Prescribing</i>	01
● <i>Intelligence: Mental age, Intelligence Quotient (IQ)</i>	01
<b>vi. Medical Statistics</b>	(05)
● <i>Statistical Averages / Measures of Central Tendency</i>	03
● <i>Measures of Dispersion</i>	01
● <i>Scales of Measurement</i>	01

## **Paper-I**

### **Neuroanatomy:**

Structure of the nerve, plasma membrane, nerve cell process. The types of cell found within nervous system. Neuronal synapses. The general anatomy of the brain, cranial nerves and spinal cord. Functions of the lobes and some major gyri including prefrontal cortex, cingulate gyrus and limbic system. The anatomy of the basal ganglia. The internal anatomy of the temporal lobes especially hippocampal formation, amygdala and reticular formation, the major white matter pathways, corpus callosum. Papez's circuit and other circuits relevant to integrated behavior. The major neurochemical pathways.

### **Neurophysiology:**

- The basic concepts in the physiology of nervous system, synapses and receptors, including synthesis, release and uptake of transmitters. Basic knowledge of action potentials, resting potentials, ion fluxes and channels etc.
- The physiology of nervous system involved in integrated behavior including perception pain, memory, motor function, arousal, drives and the emotions including aggression fear and stress knowledge of disturbances of their functions with relevance to organic and nonorganic psychiatry.
- The localization of cerebral functions throughout the life span and their relevance to the effects of injury at different ages to the brain and behavior. An understanding of neurodevelopmental models of psychiatric disorders and of cerebral plasticity.
- A basic knowledge of the physiology of arousal and sleep with particular reference to noradrenergic activity and the locus ceruleus. Nature of dream and its relationship with sleep. The normal EEG and evoked response techniques. Their application in investigation of cerebral pathology, seizure disorders, sleep and psychiatric disorders. The effects of drug and different disorders on EEG.

### **Anatomy and Physiology of Endocrine System:**

- Anatomic consideration of thyroid glands, formation and secretion of thyroid hormones, transport and metabolism of

thyroid hormones, effect of thyroid hormones, regulation of thyroid secretion.

- Anatomic consideration of islets of Langerhans in the pancreas, biosynthesis and secretion of insulin, effects of insulin on various tissues, effects of intracellular glucose deficiency or insulin excess, Adrenal morphology, structure of medullary hormones, effects of catecholamines, regulation of adrenal medullary secretion, structure and biosynthesis of adrenocortical hormones, steroid biosynthesis, Action of ACTH, action of angiotensin II, transport, metabolism and excretion of adrenocortical hormones, effects of adrenal androgens and estrogens, Resistance to Stress, Regulation of glucocorticoid secretion (role of ACTH, adrenal responsiveness, circadian rhythm, the response to stress, glucocorticoid feedback).
- Morphology of Pituitary glands, Hormones secreted by Pituitary Glands and their effects.
- Anatomical consideration of gonads, Secretion of sex hormones, Function of sex hormones, Pituitary gonadotropin and prolactins.
- Anatomical consideration of pineal glands, Regulation and secretion of melatonin, Function of Pineal Glands.

### **Cellular structure (Neurohistology) and Neuroembryology**

#### ***Cellular structure (Neurohistology):***

- Organization of the cell
- Physical structure of cell
- Functional system of cell
- Genetic control of protein synthesis, cell function and cell reproduction
- Cell division (mitosis, meiosis)
- The forms and characteristics of epithelial tissue, connective tissue, adipose tissue, nerve tissue, muscle tissue
- Structure of the nerve plasma membrane, nerve cell process
- The types of cell found within nervous system.
- Neuronal synapses

### **Neuroembryology:**

- Neural tube and its histogenesis
- Development of the brain-cerebral vesicles and its primary divisions
- Derivatives of rhombencephalon, mesencephalon, prosencephalon
- The development of commissures
- The development of spinal cord, cranial nerves, spinal nerves and the neural crest, autonomic nervous system
- Histological differentiation of nerve cells, glia cells, neural crest cells and myelination
- Congenital malformation of the brain and spinal cord

### **Genetics:**

Basic concepts-chromosomes, cell division, gene structure, transcription and translation, normal cerotype, pattern of inheritance. Traditional techniques: Family, twin and adoption studies. Techniques of molecular cloning and gene probes and others.

Condition associated with chromosomal abnormalities cryptogenic and Mendelian disorders, disorders with multifactor inheritance, Fragile X syndrome. Prenatal identification, chromosomal and DNA analysis. Genetic counseling. Molecular and genetic heterogeneity. Phenotype / genotype correspondence.

### **Paper-II**

#### **Basic Pathology:**

- Cellular Response to Injury, Free Radical Induced Cell Injury
- Definition of Cell Necrosis, Definition of Apoptosis
- Definition of Inflammation, Chemical Mediators of Inflammation
- Mutation, Mendelian Disorders, Multifactorial Inheritance, Cytogenetic Disorders

#### **Neuropathology:**

- The neuropathology of organic disorders including the dementia, delirium and amnesic disorder, lobar damage and its dysfunctional presentation.

- The neuropathology of schizophrenia, obsessive-compulsive disorder (OCD), neuropathology of other psychiatric disorders particularly disorders of brain damage related to stress-the glucocorticoid cascade hypotheses.
- Condition associated with mental retardation inborn error of metabolism. Pathology of degenerative disorders including Alzheimer's disease, Pick's of disease, Huntington's disease.
- Parkinson's disease and tardive dyskinesia.
- Association between the localization of gross cerebral lesions and clinical signs (including tumors, trauma, cerebra-vascular disease, infections including slow versus and unconventional agent affections).

### **Pathology of Endocrine Disorder and Neuroimmunology:**

Pathology of endocrine glands including hyperthyroidism, hypothyroidism, hyperpituitarism, hypopituitarism, hyperparathyroidism, hyperparathyroidism, hypoadrenalism, hyperadrenalism in to psychiatric disorders, diabetes.

### **Neuroimmunology:**

Overview of Immune system, Stress and Immune Response, relevance of Immune System and CNS interactions to psychiatric Disorder.

### **Psychopharmacology**

#### **i. General principles:**

A brief historical review of the development of psychotropic drugs and classification of psychotropics. The principles of rational prescribing of psychotropics.

#### **ii. Pharmacokinetics:**

General principles of absorption, distribution, metabolism and elimination. Comparison of different routes of administration as they affect drug availability, elimination and access to the brain through blood-brain barrier. Relationship between plasma drug level and therapeutic response.

#### **iii. Pharmacodynamics:**

Synaptic receptor complexity, subtypes of receptors, phenomenon of receptor up / down regulation. The principal CNS pharmacology of psychotropics with particular attention to their postulated mechanism of action in achieving



therapeutic effect at both synaptic, molecular and system levels. These groups mainly include antipsychotics, mood stabilizing agents, antidepressants, anxiolytics, hypnotics, psychostimulants and antiepileptic agents. Neurological effects of ECT.

**iv. Classification of Psychotropic Drugs:**

Broad classification of psychotropic drugs, Classification of Antipsychotics, Antidepressants, Anxiolytics and hypnotics, Mood Stabilizers, Stimulants, Cholinesterase inhibitors.

**v. Adverse Effects:**

Understanding dose related adverse reactions associated with main groups of risks and benefits of psychotropic drugs in acute. Short and long term use including effects of withdrawal.

**vi. Drug Interaction:**

Concept, types, Pharmacokinetic interaction, pharmacodynamic interaction, idiosyncratic interaction. Cytochrome P450 Enzymes, Cytochrome P450 Substrates and inhibitors.

## Biochemistry

### Basic Biochemistry:

General consideration, relationship of biochemistry and health, electrolyte dissociation and activity, acid, base and buffers, nature of biochemical reactions, biomolecules-cellular environment including water and pH, functional role of subcellular organelles and membranes-osmotic pressure, the colloidal state.

### Neurochemistry:

- i. Neurotransmitters: synthesis, storage and release ion channels and calcium flux in relation to ion channels.
- ii. Receptors: structures and function in relation listed below in pre-synaptic and post-synaptic receptors.
- iii. Basic biochemistry of noradrenaline, dopamine, GABA, acetylcholine, excitatory amino acids.
- iv. Neuropathies: Elementary knowledge of neuropathies, particularly corticotrophin releasing hormone and cholecystokinin, encephalins and endorphins.
- v. Chronobiology.

### **Metabolism:**

Energy metabolism including respiratory chain and oxidative phosphorylation, intermediary metabolism, metabolism of carbohydrates, protein including purine and pyrimidines, nucleotides and fat metabolism.

### **Paper-III**

#### **i. Basic Psychiatry**

- *Classification of Psychiatric Disorders*
  - *Common Aetiology of Psychiatric Disorders*
    - **Genetic factors**
    - **Environmental Factors**
    - **Social Factors**
    - **Biological Factors**
  - *Presenting Problems and Symptoms and Signs (Phenomenology) of Common Psychiatric Disorders*
  - *Psychiatric History Taking and Mental State Examination*
- #### **ii. Neurological Diseases related to Psychiatry**

- *Seizure Disorder*
- *Headache*
- *Vestibular Disorders*
- *Neuroinflammatory Disorders*
- *Neurodevelopmental Disorders*
- *Neurodegenerative Disorders*
- *Intracranial Mass Lesion, Raised Intracranial Pressure*
- *Infections of Nervous System*
- *Disorders of Cerebellar Function*
- *Disorders of Peripheral Nerves*
- *Cerebrovascular Disease (CVD)*

### iii. Endocrine Disorders related to Psychiatry

- Disorders to Thyroid Gland*
- Disorders of Reproductive System*
- Disorders of Adrenal Glands*
- Disorders of Hypothalamus and Pituitary Glands*
- Disorders of Endocrine Pancreas and Parathyroid Gland*

### iv. Nutritional Disorders related to Psychiatry

- *Under-Nutrition and Obesity and its Relation to Psychiatric Disorders (Protein energy malnutrition, Vitamin deficiency etc.)*

### v. Behavioral Sciences

- *Definition of Behavioral Sciences and Social Sciences*
- *Behavior and its Determinants*
  - Factors Related to Brain (cortical lobar function)*
  - Factors Related to Endocrine System (Thyroid, Adrenal and Pituitary Gland)*
  - Psychosocial Factors*
- *Concept of Health and Mental Health*
- *Definition and Types of Emotion and Concept of Motivation*
- *Doctor Patient Relationship, Medical Ethics, Good Prescribing*
- *Intelligence: Mental age, Intelligence Quotient (IQ)*

### VI. Medical Statistics

- *Statistical Averages / Measures of Central Tendency*
- *Measures of Dispersion*
- *Scales of Measurement*