SYLLABUS FOR

FELLOWSHIP

FCPS OPHTHALMOLOGY PART - I & II

(Including Contents of Examinations)

FACULTY
OF
OPHTHALMOLOGY

BANGLADESH COLLEGE
OF
PHYSICIANS & SURGEONS
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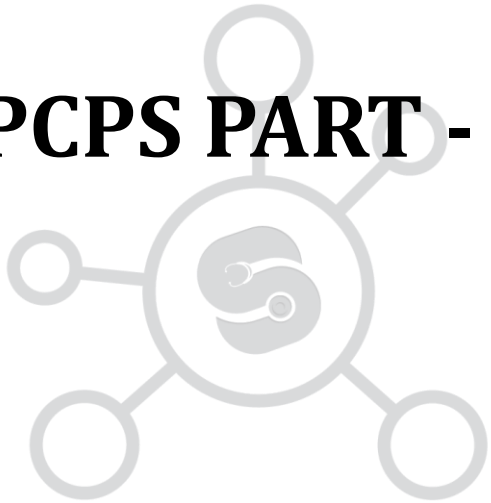
Mohakhali, Dhaka-1212, Bangladesh

PCPS PART - I



CONTENTS

TOPIC - WISE DISTRIBUTION

PAPER - I

- Anatomy including Histology. Embryology

PAPER - II

- General Physiology
- Ocular Physiology, Biochemistry Pharmacology
- Biostatistics

PAPER-III

- Pathology, Microbiology. Parasitology. Virology & Immunology
- Ocular Pathology
- Epidemiology

ANATOMY

(Basic)

Marks 50

01. Head & Neck
02. General Nervous System
03_ Respiratory System
04. Cardio Vascular System
05. Endocrinology
06. Castro intestinal Tract, Liver Spleen & Kidney.
07. Embryology
08. Histology

ANATOMY

(Applied)

Marks: 50

01. Development or Eye & Ocular Appendages

02, Anatomy of Skull

03. Orbit

04. Paranasal Sinuses

05. Eyelids, Conj, Lacrimal App.

06. Eyeball & Dimensions

07. Extra Ocular Muscles

08. Visual Pathway & Visual Cortex

09. Autonomic Nervous System

ANATOMY (PAPER-I)

I. SECTION: A (BASIC)
Candidates should have a knowledge of the structures and functions of head and neck, central nervous system and thoracic viscera. A candidate is also required to know the basic of histology of relevant structures so that he can understand functions of different tissues and organs.

Basle general Anatomy:
CNS: Head and Neck & Brain
Anatomy of the cranial cavity kind contents.
Brain, spinal cord, meninges
Cerebral circulation
Cranial nerves
Anatomy of the base of the skull and paranasal sinuses
Peripheral Nerves - related to ophthalmic importance
CSF formation and circulation
Autonomic Nervous system - Organization & Functions

Respiratory system:
Airway & Lungs
Anatomical basis of the maintenance of airway and tracheostomy

Cardiovascular system:
Pericardium
Heart
Coronary circulation
Major arteries and veins - course and distribution in head & neck

Endocrine system:
Pituitary gland
Thyroid gland
Other endocrine glands

Musculo skeletal system:
Facial muscles Muscles
Musceles of Head & neck
Bulbar muscles

Gastro intestinal tract, liver spleen & kidneys

Embryology:

Knowledge of basic embryology & embryology related to ophthalmology Basis of cangenital anomalies which may prrichi, ocular problems

II. SECTION: B (APPLIED)

Candidates will have detailed knowledge of the structure and function of the eye, the ocular adnexa, orbit, paranasal sinuses, visual pathway and visual cortex.

01) Development of the Eye and ocular appendages
02) Anatomy of the akull
03) ORBIT
04) Pnranntial sinuses
05) The ocular appendagra eyelids, romunctiva and lammed apparatus
06) The eyeball and its dimensions
    a) The cornea and sclera
    b) Anterior chimbv r nod drainage ringly
    c) The iris
    d) The posterior chamber & ciliary body
    e) The choroid end uveal vessels
    f) The lens & zonules
    g) The vitreous
    h) The retina
07) The artraocular muscles and ocular movements
08) The orbital blood vessels
09) The orbital nerves
10) The visual pathway and visual cortex
11) The autonomic nervous system related to ophthalmology

PHYSIOLOGY

	Marks
General Physiology & Biochemistry	38
Pharmacology	06
Biostatistics	06

01. General & Cellular Basis of Physiology
02. Nerve & Muscle Cells
03. Nervous System
04. Blood and Reticulo Endothelial System
05. Respiratory System M. Cardiovascular System
07. Endocrine System
08. Fl. & Electrolytes
09. Metabolism & Nutrition
10. Renal Physiology
11. Gastrointestinal Function

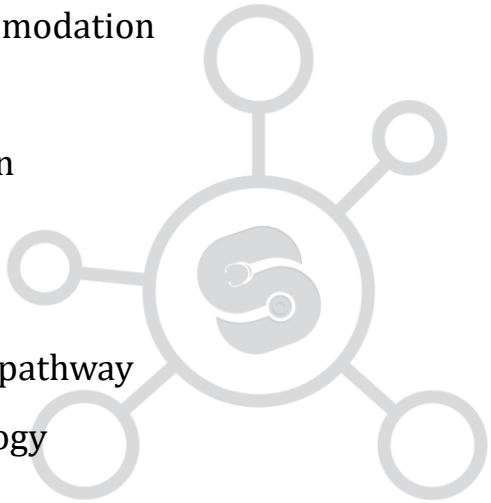
Pharmacology

Biostatistics

PHYSIOLOGY (APPLIED)

Marks-50

01. The eyelids and lacrimal apparatus
02. The Conjunctive and Cornea
03. Somatosensory Features of the Eye
04. Extraocular muscles
05. Ocular circulation
06. The pupil & accommodation
07. The lens
08 Physiology of vision
09. Vitreous
10. The retina
11 The central visual pathway
12. Ocular Pharmacology



PHYSIOLOGY (PAPER-II)

I. SECTION: A (BASIC)

A. PHYSIOLOGY & 1310CHEMIsTRY:

01. The General & Cellular Basis of Medical Physiology

02. Physiology of nerve & muscle cells

a) Excitable tissue: Nerve
b) Excitable tissue: Muscle
c) Synaptic & functional transmission
d) Initiation or impulses in sense organs

03. Functions of the nervous system:

a) Cerebrospinal fluid
b) Intracranial pressure
c) Temperature control
d) Spinal cord function
e) Cerebral blood flow

04. Blood and reticuloendothelial system

a) Function of the haemopoietic and reticule, endothelial system. Haemostasis and fibrinolysis
b) Blood grouping and crow matching
c) Transfusion and its hated.
d) Functions of plasma protein

05. Respiratory system

a) Mechanism of ventilation
b) Mechanical and cellular respiration -factors which may affect them.
c) Pulmonary function tests.
d) Respiratory failure
e) Oxygen therapy and ventilatory support.

06. Cardiovascular system

a) Electrocardiography
b) Blood now, and its management
c) Regulation of blood pressure
d) Shock, central venous pressure
e) Cardiac output
f) Capillary function and fluid exchange
g) Cardiac failure – Inotropic and chronotropic drugs
h) Oedema

07. Endocrine System:

a) Hypothalamas
b) Pituitary, Thyroid
Parathyroid and Adrenal glands
Pancreas
c) Pregnancy
d) Gonadal function

08. Fluid and Electrolytes:

a) Acid base balance
b) Fluid balance
c) Body fluid
d) Fluid compartments
e) Electrolytes

09. Metabolism and Nutrition.

a) Metabolism of carbohydrate, lipid and protein
b) Basal metabolic rate
c) Dietary balance.
d) Vitamins
e) Enteral and parenteral feeding.
f) Metabolic Response to injury.

10. Renal Physiology

a) Assessment of renal function.
b) Remit blood flow
c) Formation and composition or urine
d) Renal failure

11. Gastrointestinal Function:

Digestion, absorption & regulation of gastrointestinal function.

B. PHARMACOLOGY

01. Basic considerations.
02. Principles of cortisone & ACTH therapy,
03. Principles of antibiotic therapy.
04. Carbonic anhydrase inhibitors and osmotherapeautic agents
05. Autonomic nervous system, agents.

C. IMOSTATISTICS –

01. Basic concept of biostatistics - definition, importance, uses, scope rind limitations.
02. Derina t Lon and concept or important terms and rates used in medical and vital statistics,
03. Types of studies, common terminology, methods of data collection,
04. Concept or sampling.
05. Basic concept or probability.
06. Frequency and probability distribution concept and their application in medicine.
07. Methods of displaying and projecting data
08. Correlation and regression
09. Measures of variability.
10. Basic -concept of experimental design relevant to medical Science, clinical
11. Test of significance.
12. Methods and principles of recording and maintenance of information.
13. Requirements health information system

II SECTION: B (APPLIED)

(Ocular Physiology, Biochemistry & Pharmacology)

The candidate should have the knowledge of the physiological function of the normal eye, ocular adnexa, the orbit and visual pathway

A. Physiology & biochemistry

01. The eyelids
02. The lacrimal apparatus.
03. Conjunctiva,
04. The cornea
05. Somatosensory features of the eye
06. The extra ocular muscles,

07. Ocular circulation.
08. The ciliary epithelia & aqueous humor
09. Intraocular pressure
10. The vitreous
11. The lens
12. Accommodation
13. The pupil
14. Radiometry and photometry
15. Metabolism and photochemistry in the retina
16. Entoptic imagery
17. Visual adaptation
18. Visual acuity
19. The temporal responsiveness of vision
20. The retina
21. The optic nerve
22. Electrical phenomena in the retina
23. Color vision
24. The central visual pathway
25. Binocular vision
26. Physical principles of optics

B. Pharmacology

01. Local anesthetics
02. Viscoelastics
03. Medical agents in surgical, care
04. Therapy or diseases of the –
    Eyelids
    Conjunctiva
    Cornea
    Sclera
05. Therapy of glaucomas
06. Therapy of intraocular infections
07. Therapy of diseases of retina
08. Therapy of Uveitis
10. Therapy of diseases of die orbit

Therapeautic agents:

1. Miotics
2. Mydriatics and cycloplegics
3. Anti-inflammatory agents.
4. Immuno suppressive agents (anti neoplastic)
5. Chemotherapeutic agents
6. Analgesics
7. Anaesthetic agents: Local
   General
8. Antihistamines
9. Antifungal agents
10. Antiviral agents
11. Anti anxiety drugs.
12. Beta adrenergic blocking agents
13. Anticoagulants
14. Chelating and epitheliolytic agents
15. Enzymes
16. Preservative
17. Antiseptics
18. Sedative
19. Hypnotics
20. Vaccines
21. Vasodilators
22. Vitamins
23. Paediatric dosages determination

PATHOLOGY

	Marks
Pathology	84
Epidemiology	16

PATHOLOGY

(Basic)

01. Cellular Injury. Inflammation arid Repair
02. Haemodynarnie Disorders
03. Connective Tissue Disorder
04. Metabolic & Endocrine Disorders
05. Blood Disorder (Including Transfusion Medicine)
06. Microbiology
07. Genetic Disorders
08. Neoplasia
09. Histopathology
10. Immunological Disorder
11. Tissue Tramplantation

Epidemiology

PATHOLOGY (APPLIED)

Marks: 50

01. Inflammation
02. Wound healing
03. Congenital defects
04. Diseases of adnexa
O5. Anterior segment diseases
06. Vitreo retinal disorders
07. Effects of hypo and hypertension on eyeball (including glaucoma)
08. Orbital disorders
09. Neuro ophthalmology
10. Neoplasms
11. Infection & Sterilization

PATHOLOGY (PAPER-III)

I. SECTION A = BASIC (GENERAL):

The candidate should have sound knowledge of the principles of Pathology, Microbiology, Virology, Parasitology and Immunology, Knowledge of inflammation, Infection, Neoplasia, Atrophy, Hypertrophy, Hyperplasia and Metaplasia etc.

01. Cellular growth and differentiation.

Normal regulation and adaptations.

02. Cellular injury and cellular death. Cause or diseases.

03 Inflammation and repair.

04. Haemodynamic disorders, thrombosis and shock. General reaction to trauma Haemorrhage, shock and embolism. Ischaernia and infarction_ Disturbances of body's fluid and electrolyte balance,

05 Connective tissue i its normal structure and the effects of diseases.

06. Disorders of metabolism,

07. Disorder of nutrition,

08. Disturbances of endocrine functions,

09. Calcium metabolism and lieterotopic calcification.

10. Temperature regulation fever & hypothermia

11. Oedema

12. Amyloidosis.

13. The plasma proteins.

14. Pigments or the body and their disorders.

15. Disorders of the blood: the red cells, the white cells and the platelets.
16. Blood grouping and blood transfusion.

17. The principles of disinfection.

Pathology specimens:

- Frozen section technique
- Biopsy technique
- Handling, fixation and transport of specimens
- Aspiration Cytology

Immunology

01. Immunological principles.
02. Immunology & ophthalmic disease: major immunologic features, immune response, immunologic pathogenesis, Immunotherapy.
03. Hypersensitivity and drug reaction
04. Autoimmunity and autoimmune diseases
05. Immunodeficiency disorders affecting the eye
06. Transplantation immunology
    Organ tansplantation, Graft rejection
07. Tumour immunity

Virology:

01. Classification, General characters and Morphology.
02. Replication or viruses.
03. Interferon, Interference.
04. Bacteriophages (General principles)

Parasitology:

O1. Host parasites relation. Ideal parasites, Classification of medically, important parasites

Mycology:

Classification, cultural character of fungi.

EPIDEMIOLOGY:

01. Introduction, Design strategies. Disruptive studies. Case reports a rid Case series, Surveys.
02. Analytic –design: Observational, Experimental, or Interventional Study (Clinical trial)
03. Statistical association: Chance, Bias, Confounding, Validity, Generalizability, Consistency.
04. Sample size and power

II. SECTION - B : (APPLIED)

Detailed knowledge of pathology of eye, ocular adnexa, the orbit and visual pathway.

Ophthalmic pathology

01. Efficient tissue preparation and interpretation.
02. Inflammation - particular reference to the eye.
03. Ophthalmic wound healing, surgical complication and trauma.
04. Congenital defects.
05. Eye lids.
06. The conjunctiva
07. Cornea.
08. Lens
09. Retina & Vitreous.
10. Vascular disorders of the eye.
11. Orbit.
12. Optic nerve.
13. The glaucomas.
14. Primary and secondary tumors of the eye
15. Ocular tissue effect of hypotension and hypertension of the eyeball.
16. Infection and Sterilizing.

18. Principles of bacteriological diagnosis.
19. The physics of ionising radiation.
20. Genetic disorder Basle Principles of Genetics; (Genetics of ocular disorders and general disorders with ocular involvement)
21. Immunological disorders: basic aspects.

22. Neoplasia –
Neoplasia
Chemotherapy, Radiotherapy
Immunotherapy

23. Infectious diseases:
Body's defence against infection
Body's response to infection
Acute pyogenic infection
Hospital infection
Specific infectious diseases

CNS

- Neoplastic conditions
- Raised intracranial pressure
- Skull fractures
- Closed head injury.
- Cerebrovascular diseases
- Demyelination, Parkinsonism

Respiratory system:

Condition which can give rise to ocular features e.g. inflammatory, degenerative and vascular disorders.

Cardin vascular system:

- Aneurysm
- Penpheral vascular disease
- Coronary artery disease
- Thrombosis / embolism
- Venous insufficiency
- Lymphoedema