

Notes:-

1. The total syllabus is divided into 10 units. Of these 4 units are covered in paper I and 6 units in paper II.
2. Distribution of marks has been made based on the relative importance of each topic in regular work.

Standard (Recommended) Textbook:

1. *Comprehensive Ophthalmology* – A.K Khurana
2. *Basic Ophthalmology* – Renu Jogi
3. *Anatomy and Physiology in Health and Illness* – Ross and Wilson
4. *Preventive and Social Medicine* – K. Park

PAPER - I (Full Marks 150)

Unit I - General anatomy and Physiology (10)

- Musculoskeletal system: Types of muscle, bones and joints and their functions
- Circulatory system: The heart & Blood vessels - structure and functions.
Blood – Composition and functions.
- Nervous system: Parts of the brain with special references to the cranial nerves.
- Respiratory Systems: Basic structure and functions.
- Urinary Systems : Basic structure and functions
- Digestive Systems : Basic structure and functions
- Endocrine Systems: Basic structure and functions
- Reproductive Systems: Basic structure and functions

Unit II – Ocular Anatomy and Physiology (30)

1. Bony Orbit
2. Extra ocular muscle, movement of the eyeball and binocular vision
3. Eyelids, Lacrimal Apparatus and Tear Film
4. Gross anatomy of the coats of the eyeball
 - Fibrous coat: Cornea and Sclera.
 - Vascular coat: Uveal tissue-iris, ciliary body & choroids
 - Nervous coat: Retina
5. Anterior and Posterior chamber.
6. Physiology of vision, visual pathway including colour vision.
7. Accommodation and convergence.
8. Formation, circulation and drainage of aqueous and lacrimal fluids.
9. Pupillary Reflex- Light and near reflex.
10. Intraocular pressure.

Unit III - Optics and refraction (55)

1. Physics and Optics:-
 - Properties of light- Laws of reflection and reflection of light
 - Lenses and their combination –Bifocal, multifocal lenses, toric lenses, protective lenses, tinted lenses.

- Optical aberrations of ophthalmic glasses. Refraction by various glasses. Lens material and manufacturer.
 - Prism.
2. Vision Testing:-
 - Components of vision, principles of testing visual acuity.
 - Distant and near vision. Colour vision
 3. Dark Room Procedure and Retinoscopy:-
 - Dark Room procedure
 - Direct/Indirect Ophthalmoscopy
 - Principles and methods of Retinoscopy
 - Objective and subjective method of retinoscopy.
 4. Geometrical and Physical Optics:-
 - Optics of human eye and refractive errors.
 - Myopia, Hypermetropia – Definitions, clinical symptoms and signs, complications and correction.
 - Aphakia, Presbyopia, Anisometropia, Aniseikonia- Definitions, descriptions, clinical signs and symptoms, complication and management
 - Astigmatism – Definition, signs and symptoms, complication and management.
 - Amblyopia – Definition, types, signs and symptoms, complication and management.
 - Accommodation and convergence.
 - Contact Lenses:-Types, uses and abuses.
 - Protective glasses and Low Vision Aids

Unit IV – Ophthalmic Techniques (55)

1. Visual Fields:-
 - Central and Peripheral Fields.
2. Nursing care of Ophthalmic Patients:-
 - Preoperative preparations of patients- Cutting of lashes, preparation of eye and ocular bandaging.
 - Bed making and laying trolley for dressing.
3. Ophthalmic Instruments:-
 - Names, uses and maintenances of Ophthalmic surgical instruments
 - Laying of trolley for ophthalmic surgeries – Cataract, glaucoma, Pterygium, chalazion, entropion and squint.
 - Maintenance of surgical instruments.
4. Ophthalmic Diagnostic Instruments:-
 - Instruments for refraction and optometry
 - Keratometry
 - Transposition of lenses
5. Minor ocular surgical procedures:-
 - Instillation of eyedrops, sub Conjunctival and intramuscular injections.
 - Fomentation, irrigation, epilation
 - Syringing.
 - Tonometry.

6. Dispensing Optics:-
- Marking and edging of various types of lenses.
 - Absorptive lenses.
 - Spectacles magnifier
 - Form of lenses, base curves, lens tools and blanks
 - Determining lens power.
 - Types of lens, spectacle frames and materials.
 - Surfacing and polishing.
 - Dispensing lenses
 - Faults inspection.
 - Selection of frames
 - IPD measurement
 - Lensometry and GENEVA lens measure.

PAPER - II (Full Marks 150)

Unit I – Basic Microbiology (10)

- Introduction to various organisms responsible for ocular diseases(Bacteria, Virus, Fungus and Protozoa)
- Techniques of conjunctival smears, culture, scrapings and staining (Gram Stain and KOH)
- Infection and its prevention including routes, cross infections, antisepsis, asepsis and sterilization.

Unit II – Basic Ocular Pharmacology (10)

- Methods of administration of drugs in ophthalmic diseases.
- Anti-infective drugs (Antibiotics, antifungal, antiviral)
- Anti glaucoma drugs.
- Miotics, mydriatics, cycloplegics
- Drugs for dry eye.

Unit III - Health Education and Communication (20)

1. Health Education.
 - Definition, Aims and objectives.
 - Contents and principles
 - Various approaches of health education.
 - Implements used in health education
 - Mass media and Education of the public.
2. Communication:-
 - Definition and components of communication
 - Types of Communication
 - Barriers of communication

Unit IV – Community Ophthalmology (40)

1. Blindness:-
 - The problem of Blindness in India
 - Causes of blindness in India
 - Epidemiological factors of blindness in India
2. Prevention of Blindness:-
 - Initial assessment.
 - Methods of intervention.
 - Levels of eye care
 - Mobile eye care/clinics.
 - Role of Ophthalmic Assistant in Eye camps/Clinics.
 - School eye camp services.
 - Occupational; eye health services.
 - Rehabilitation of the blind.
3. Vitamin A
 - Sources and functions of vitamin A
 - Signs and symptoms of vitamin A deficiency in the eyes.
 - Assessment of Vitamin A deficiency
 - Vitamin A prophylaxis programme
 - WHO strategies for the prevention and control of Vitamin A deficiency.
4. National Programme for Control of Blindness (NPCB)
 - Introduction
 - Infrastructure, development and strategies of the programme.
 - Revised strategies.
 - District Health Society -Blindness Division-(Previously District Blindness Society)

Unit V – Common Diseases of the eye and Muscular Imbalance. (50)

1. Glaucoma:-
 - Definition, etiology and classification.
 - Clinical signs and symptoms
 - Management and Complications.
 - Role of Ophthalmic Assistant in prevention, detection and follow up of glaucoma cases.
2. Cataract:-
 - Definition, etiology and classification.
 - Clinical signs and Symptoms. Detection of cataract.
 - Management.
 - Role of Ophthalmic assistant in detection, pre operative and post operative follow up of cataract cases.
3. Common Eye Disorders:-
 - Conjunctivitis- Types , clinical signs and symptoms, treatment and complication
 - Trachoma – classification, etiology, signs and symptoms, management and prevention.

- Corneal ulcers –Definitions, types, clinical signs and symptoms, complications and management.
 - Lids and Lacrimal apparatus – common diseases, abnormalities and treatment.
4. Diseases of posterior segment (Brief descriptions):-
- Uveitis
 - Retinitis
 - Optic neuritis.
5. Ocular emergencies:-
- Chemical, mechanical and thermal injuries- First aid and treatment, prevention
6. Ocular manifestations of systemic disorders:-
- Diabetes
 - Hypertension.
 - Malnutrition
7. Squint:-
- Nomenclature, classification and measurement.
 - Amblyopia with special emphasis on prevention.
 - Assessment of binocular vision.
 - Clinical signs and symptoms, investigations and management.

Unit - VI Aptitude Test (20 Marks)

(a) Numerical And Figurework Tests: (4 Marks)

These tests are reflections of fluency with numbers and calculations. It shows how easily a person can think with numbers. The subject will be given a series of numbers. His/Her task is to see how the numbers go together to form a relationship with each other. He/She has to choose a number which would go next in the series.

(b) Verbal Analysis And Vocabulary Tests: (6 Marks)

These tests measure the degree of comfort and fluency with the English language. These tests will measure how a person will reason with words. The subject will be given questions with alternative answers, that will reflect his/her command of the rule and use of English language.

(c) Visual And Spatial/3-D Ability Tests: (4 Marks)

These tests are used to measure perceptual speed and acuity. The subject will be shown pictures where he/she is asked to identify the odd one out; or which comes next in the sequence or explores how easily he/she can see and turn around objects in space.

(d) Abstract Reasoning Tests: (6 Marks)

This test measures the ability to analyse information and solve problems on a complex, thought based level. It measures a person's ability to quickly identify patterns, logical rules and trends in new data, integrate this information, and apply it to solve problems.
