

OPHTHALMALIC TECHNIQUES

PART - II

ANATOMY OF THE HUMAN EYE:

A brief description of the human eye including the study of the followings:

- a. Orbit.
- b. The eye lids.
- c. The lachrymal apparatus.
- d. The conjunctiva.
- e. The anterior chamber.
- f. The cornea.
- g. The sclera.
- h. Iris, ciliary body and pupil.
- i. The lens.
- j. The choroids
- k. The vitreous.
- l. The retina.
- m. The optic nerve and optic pathway, visual cortex.
- n. Extra ocular muscles and their actions.

OPTICS AND REFRACTION

- a. Principles of optics and their application in ophthalmology.
- b. Properties of light.
- c. Concept of refraction, reflection and refractive index.
- d. Types of lenses, prisms and mirror and image formation.
- e. Concept of focal length and refractive power (diopter).
- f. Common errors of refraction.
- g. Principles of refraction.
- h. Correction of errors of refraction.
- i. Optics of ophthalmic instruments.
- j. Equipment related to Optics and Refraction like Ophthalmoscope, Perimeter, Tonometer, autorefractor, and Slitlamp

OPTICS

Chapter-1

Reflection & refraction laws of reflection & refraction, regular and irregular reflection and their examples Real and virtual images

Chapter-2 Mirrors

Convex & Concave mirrors their types, focus, centre of curvature & role of the mirror, focal length & centre of curvature of the mirror.

Ray diagram of concave & convex mirror. Image diagram of concave & convex mirror. Different problem for finding the focal length image position or object position from the mirror.

Chapter-3 Lenses

Convex & concave large their types, different terms like focus, focal length, principal axis, centre of curvature, radius of curvature focal & aperture of the lens formula, different problem on lens formula for finding out

- i. Position of the object
- ii. Position of the image
- iii. Size of the object or image
- iv. Magnification of the Lens

Chapter-4 Defects of Eye

- i. Comparison of camera & eye
- ii. Dispersion of light from critical angle
- iii. Angle of deviation.

PRINCIPLES OF OCULAR SURGERY

- u. Sterilization.
- v. Instruments their usage and care.
- w. Method of Assistantship.

- x. Behavior in the operation theatre.
- y. Maintenance of instruments in the O.T and OPD
- z. Preoperative and postoperative care of the ophthalmic patients.
- aa. Hospital acquired infections and their prevention.

CLINICAL OPHTHALOMOLOGY

A brief description of the following disease and nursing care, of patients with eye disorders.

- a. Glaucoma-measurement of IOP (Tonometry).
- b. Ocular injuries:
 - i. Burns.
 - ii. Mechanical injuries.
 - iii. Laceration of the eyelids.
 - iv. Foreign bodies.
 - v. Injuries of the conjunctiva.
 - vi. Abrasions and superficial lesions of the cornea.
 - vii. Perforating injuries of the eyeball.
 - viii. Contusions of the eye ball.
 - ix. Orbital injuries.

DISEASES

- c. Diseases of Lid.
- d. Diseases of conjunctiva.
- e. Diseases of cornea.
- f. Diseases of uveal tract.
- g. Diseases of Lens (cataract).
- h. Diseases of Lachrymal apparatus.

PHARMACOLOGY

- a. Methods of drugs delivery to the eye.
- b. Mode of action of drugs.
- c. Side effects and contra indications.

- d. A brief review of the following classes of drugs.
 - i. Local anesthetics used in ophthalmology
 - ii. Drugs used in glaucoma.
 - iii. Mydriatics and cycloplegics.
 - iv. Anti-infective ophthalmic drugs.
 - v. Diagnostic eye solution.
 - vi. Lubricants and artificial tears.

LIST OF PRACTICALS

Ocular Surgery

- Preparation of Operation Theatre for common Ocular Surgery

- CATRACT
- CHALAZION
- SYRINGING
- DACRYOCYSTECTOMY
- GLAUCOMA
- EPILATION
- STRABISMUS

OPTICS/REFRACTION

Practical-I: To diagnose common error of refraction & Management in:-

- MYOPIA
- HYPERMETROPIA
- ASTIGMATISM
- PRESBYOPIA
- ANISOMETROPIA
- EMETROPIA
- COLOURED VISION

Practical-II Retinoscopy

- INDICATION
- APPARATUS
- PROCEDURE
- PRECAUTION

Practical-III Visual Acuity

- INDICATION
- APPARATUS
- PROCEDURE
- PRECAUTION

Optics

1. To verify the laws of reflection
2. To verify the laws of refraction.
3. To find the position of an image when the position of an object from specific mirror is given.
4. To find the different position of the image of object from a convex lens.
5. To determine the position of an object from a lens, by adjusting the position of a lens.

Surgery and OPD

1. O.T. Instruments
 - i. Speculum
 - ii. Eorucal Scissors
 - iii. Needle Holders
 - iv. Hooks
 - v. Conjunctival Scissors
 - vi. Cautry
 - vii. Knife with blades
 - viii. Iris Reponters
 - ix. Stiches 10,80, silk 40
 - x. SIMCOR Cannula
 - xi. IOLs
 - xii. Visco Elasties
 - xiii. Muscles retractors
 - xiv. Care of Microscopes & bulbs.
2. OPD
 - a. Measurement of Vision
 - b. Snellen's test charts for distant vision and for near vision
 - c. Color Vision Charts
3. Glaucoma Tests
 1. Field of Vision
 2. Schiotz Tonometer
 3. Casual Staring
4. Dressing and Bandages
 - a. How to put drops.
 - b. How to apply eye bandage
 - c. How to care FBs in eye.

Book Recommended

- a. Book of Ophthalmology by Chatterjee.
- b. Parson's Diseases of the Eye