



**STUDY GUIDE**  
**OPHTHALMOLOGY**



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## **OPHTHALMOLOGY DEPARTMENT IN A GLANCE**

Department of Ophthalmology is well-equipped with latest facilities. It has the facility of computerized eye testing, phaco-surgery and laser surgery. Almost all types of eye surgeries are being performed in this department like phaco (cataract) surgery, glaucoma surgery, squint surgery, levator resection, D.C.R. with intubation, vitreo-retinal surgery.

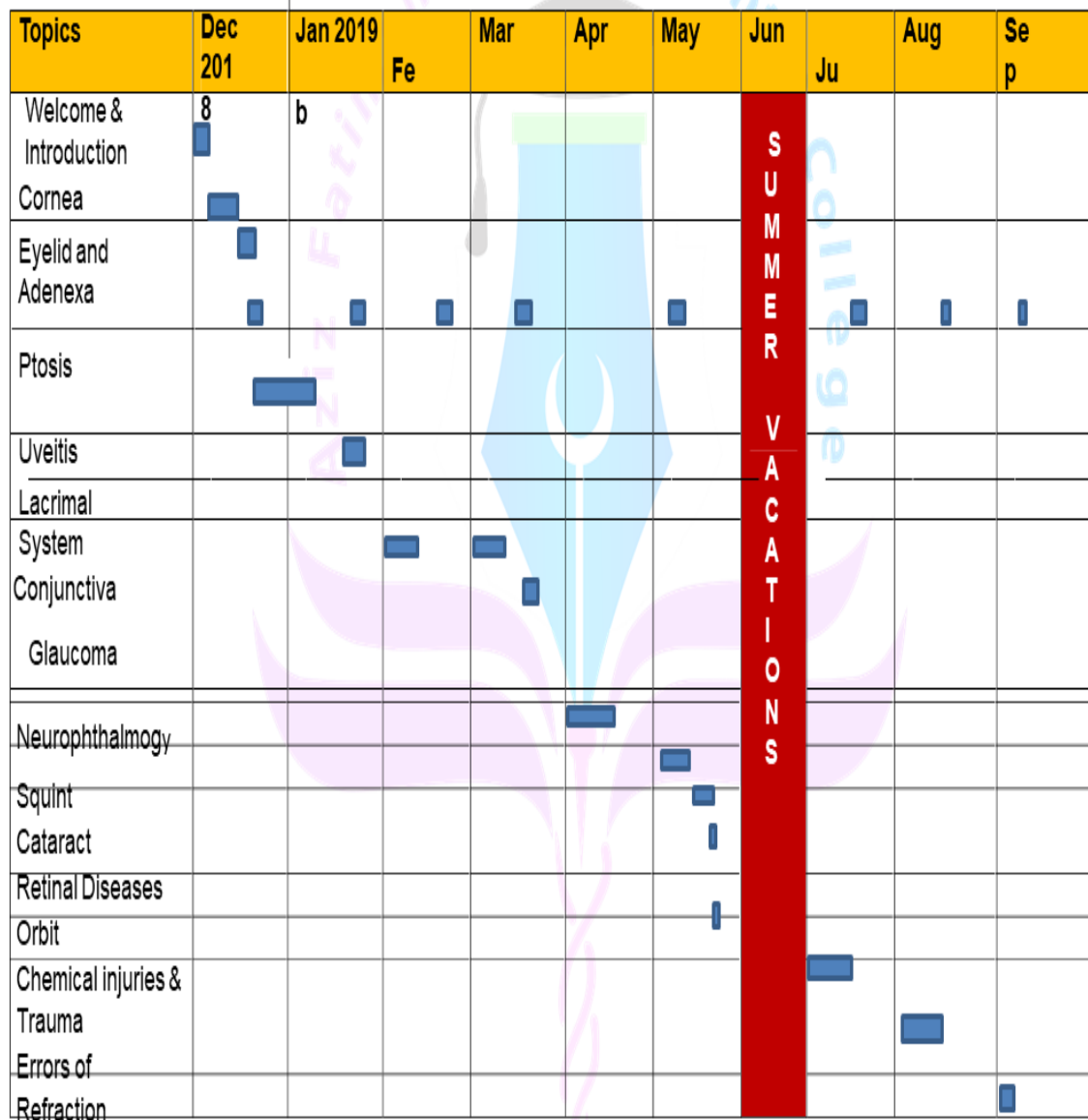
The Department of ophthalmology provides daily outpatient facility and all eye operations by a well reputed Eye Specialist. Hospital is also planning to start modern optometric services inside the outpatient building and will provide facility of latest glasses formations and lens applications teaching team of Department of Ophthalmology is committed for better training of its under-graduate and post graduate students.

The students are posted in wards and OPD for clinical training purposes and in the operation theatre to observe operations.

**DEPARTMENT of OPHTHALMOLOGY TEAM**  
**AFMDC**

| <b>Positions</b>    | <b>Name</b>                        |
|---------------------|------------------------------------|
| Head of Department  | Professor Dr. Muhammad Ahmed (HOD) |
| Assistant Professor | Dr. Muhammad Aamir Shahzad         |
| Senior Registrar    | Dr. Nasir Yasin                    |
| Optometrist)        | Dr. Iqra Khalil                    |
|                     |                                    |

## Gantt's Chart for syllabus completion



## TIME TABLES

| Day              | Weekly Break up of Lectures and Tutorials |                   |                    |                    |
|------------------|---|-------------------|--------------------|--------------------|
|                  | 1   | 2                 | 3                  | 4                  |
|                  | 8:00 am – 8:45 am                         | 8:45 am - 9:30 am | 9:30 am - 10:15 am | 10:30 am - 1:30 pm |
| <b>Monday</b>    |   |                   |                    | Ward Class         |
| <b>Tuesday</b>   |   |                   |                    | Ward Class         |
| <b>Wednesday</b> |   |                   |                    | Ward Class         |
| <b>Thursday</b>  | Lecture                                   |                   |                    | Ward Class         |
| <b>Friday</b>    |   | Lecture           |                    | Ward Class         |

# LEARNING OBJECTIVES OF OPHTHALMOLOGY

## FOURTH YEAR M.B.B.S

| TOPIC                | LEARNING OBJECTIVES  |
|----------------------|--|
| EYELIDS              | Elaborate clinical features and management plan of Blepharitis, Styte, Chalazion, Trichiasis, Entropion, Ectropion, Ptosis and common eyelid tumors                    |
|                      | Examine eyelids with torch   |
|                      | Demonstrate professional responsibility in dealing with the patients of Chalazion & Trichiasis.  |
| CONJUNCTIVA          | Have adequate knowledge of different types of Conjunctivitis and conjunctival degenerations  |
|                      | Have basic skill of examination of the conjunctiva including eversion of eyelids with accuracy and integrity in all interactions with patients                         |
|                      | Know clinical features and treatment of Trachoma and Pterygium   |
|                      | Be vigilant in washing hands after examining a patient and should explain precautionary measures to the patients to prevent spread of infection in an effective manner |
| CORNEA               | Elaborate clinical features and formulate a management plan of corneal infections  |
|                      | Examine anterior segment of the eye including corneal ulcers with torch and corneal staining with fluorescein  |
|                      | Demonstrate professional responsibility of washing hands in dealing with the patients of corneal infections  |
| LACRIMAL APPARATUS   | Be acquainted with Composition and functions of Tear film and diagnose patients of epiphora and dry eye  |
|                      | Know Clinical features of dacryocystitis and plan management of acute and chronic Dacryocystitis   |
|                      | Have adequate knowledge of causes and primary care management of dry eye   |
|                      | Perform regurgitation test   |
| SCLERA AND EPISCLERA | Recognize the risk factors and clinical features of episcleritis and scleritis   |
|                      | Examine a case of red eye and develop a differential diagnosis including episcleritis and scleritis  |

|          |  |
|----------|--|
| ORBIT    | Comprehend the causes of Proptosis   |
|          | Have sufficient knowledge to elicit signs of Thyroid eye disease and plan primary care management  |
|          | Have sufficient knowledge of clinical features, investigations and management plan of Pre-septal Cellulitis and Orbital cellulitis                 |
|          | Examine a case of thyroid eye disease  |
|          | Examine a case of orbital and pre-septal cellulitis  |
|          | Know the definition and clinical features of blow out fracture of orbit.   |
|          | Conduct relevant tests related with blow out fracture  |
| UVEITIS  | Have sufficient knowledge of anatomy of uveal tissues and classification of uveitis.   |
|          | Be familiar with clinical features, treatment and complications of anterior uveitis.   |
|          | Examine a case of red eye and form a differential diagnosis with reference to uveitis.   |
|          | Have special consideration regarding washing hands after examination of a patient with red eye to prevent spread of communicable diseases of eyes. |
| LENS     | Integrate sufficient knowledge into practice for assessment & management of cataract   |
|          | Recognize the complications of cataract surgery especially emergency management of Endophthalmitis   |
|          | Be aware of the causes of leucocoria with special reference to congenital cataract   |
|          | Have basic knowledge of causes of ectopia lentis and its systemic associations   |
|          | Examine lens (cataract and ectopia lentis) with torch  |
|          | Perform distant direct ophthalmoscopy and interpret its findings   |
| GLAUCOMA | Attain adequate knowledge of raised intraocular pressure and classification of glaucoma.   |
|          | Be able to differentiate POAG from PACG.   |
|          | Have sufficient knowledge of clinical features of PACG.  |
|          | Be able to Predict causes of secondary glaucoma occurring as a complication of mature cataract and uveitis.  |



|                     |  |
|---------------------|--|
|                     | Comprehend the clinical features of Buphthalmos and its differential diagnosis.  |
|                     | Be able to perform digital Tonometry and document findings.  |
|                     | Be able to explain vision loss to the patient and family in case of absolute glaucoma.   |
| NEURO-OPHTHALMOLOGY | Remember Pupillary reflex pathway and its abnormalities.   |
|                     | Differentiate between different types of optic atrophy and perceive abnormalities of visual pathway.                                 |
|                     | Attain sufficient knowledge of optic disc edema and should be able to differentiate optic neuritis from papilledema.                 |
|                     | Check optic nerve function and confrontation visual fields.  |
|                     | Illustrate pupillary reflexes and interpret its findings.  |
| SQUINT              | Have sufficient knowledge of extra ocular muscles and their actions  |
|                     | Be able to classify squint   |
|                     | Be able to perform extra ocular movements in an effective manner.  |
|                     | Define amblyopia and create plan for its management  |
|                     | Have ability to explain to the patient and family about the significance of amblyopia treatment and complications of non-compliance  |
|                     | Be able to perform Hirschberg test and predict its findings  |
| VITREOUS RETINA     | Acquire basic knowledge of causes and clinical features of retinal detachment and diabetic retinopathy                               |
|                     | Be able to identify the symptoms and signs of hypertensive retinopathy, CRVO and CRAO for referral to the ophthalmologist            |
|                     | Have adequate knowledge of Leucocoria especially in reference to Retinoblastoma, its clinical features and differential diagnosis    |
|                     | Be able to convey the importance of treatment of Retinoblastoma and show empathy to the family                                       |
|                     | Recognize the clinical features of Retinitis Pigmentosa and be able to convey the consequences of family consanguinity to the family |
|                     | Have basic knowledge of clinical features and management of ROP  |
|                     |  |

|                      |   |
|----------------------|---|
|                      | Be familiar with uses of direct and indirect Ophthalmoscopy   |
| OCULAR TRAUMA        | Acquire basic knowledge of ocular manifestations of blunt trauma  |
|                      | Be able to identify the symptoms and signs of penetrating injuries of the eyeball and know when to refer the patient to the ophthalmologist |
|                      | Have adequate knowledge of chemical injuries with ability to properly irrigate the eye in primary care settings                             |
|                      | Be able to remove superficial conjunctival foreign bodies   |
|                      | Know clinical features of Retinitis Pigmentosa and be able to convey the consequences of family consanguinity in hereditary eye diseases    |
|                      | Have basic knowledge of clinical features of ROP and should recommend management plan for ROP   |
|                      | Be familiar with uses of direct and indirect Ophthalmoscopy   |
| ERRORS OF REFRACTION | Know causes, clinical features and visual rehabilitation of aphakia   |
|                      | Be able to differentiate between myopia, hypermetropia and astigmatism and be familiar with corrective lenses                               |
|                      | Be able to check visual acuity for distance and near. .   |
|                      | Be able to perform pinhole test and comprehend the significance of its findings   |
|                      | Should be familiar with Retinoscopy and should be able to interpret its findings  |
| VITAMIN A DEFICIENCY | Diagnose and plan management for ocular manifestations of Vitamin A deficiency  |
|                      | Be able to effectively use torch to identify Bitot's spots  |

## **TEXTBOOKS AND REFERENCES**

1. Parson's Diseases of the Eye by Ramanjit Sihala and Radhika Tandor.  
3rd Ed
2. Ophthalmology by Renu Jogi
3. Clinical Textbook of Ophthalmology by Dr. Saleem Akhter
4. Kanski's Ophthalmology
5. Ophthalmology Principles and Concepts Newill F. W.
6. Online Journals and Reading Materials through HEC Digital Library Facility.

## TABLE OF SPECIFICATIONS FOR OPHTHALMOLOGY

### SHORT ESSAY QUESTIONS

| <u>Question Number</u> | <u>Topic Covered</u> | <u>Intellect Level</u> | <u>Level of Knowledge</u> | <u>Difficulty Level (1-5)</u> |
|------------------------|----------------------|------------------------|---------------------------|-------------------------------|
| 1                      | Conjunctiva          | Application            | C-2                       | 3                             |
| 2                      | Cornea               | Application            | C-2                       | 3                             |
| 3                      | Retina/Vessels       | Application            | C-2                       | 3                             |
| 4                      | Retina/Hereditary    | App/Analysis           | C-1                       | 3                             |
| 5                      | Orbit                | App/Analysis           | C-2                       | 3                             |
| 6                      | Lids & Adnexa        | Application            | C-1                       | 2                             |
| 7                      | Squint               | App/Analysis           | C-1                       | 4                             |
| 8                      | Cataract             | App/Analysis           | C-2/C-3                   | 3                             |
| 9                      | Neuro-Ophthalmology  | App/Analysis           | C-2/C-3                   | 3                             |

#### Topics covered in the short essay questions

1. Lids, Adnexa and Conjunctiva
2. Orbit
3. Conjunctiva
4. Cornea
5. Cataract
6. Retina/ systemic diseases
7. Retina/ Hereditary diseases
8. Squint
9. Neuro Ophthalmology

### **MULTIPLE CHOICE QUESTIONS**

| <b><u>Question Number</u></b> | <b><u>Topic Covered</u></b> | <b><u>Intellect Level</u></b> | <b><u>Level of Knowledge</u></b> | <b><u>Difficulty Level (1-5)</u></b> |
|-------------------------------|-----------------------------|-------------------------------|----------------------------------|--------------------------------------|
| 1                             | Anatomy of eye-1            | Application                   | C-1                              | 3                                    |
| 2                             | Physiology-1                | App/Analysis                  | C-1                              | 2                                    |
| 3                             | Anatomy of eye-2            | App/Analysis                  | C-1                              | 2                                    |
| 4                             | Physiology-2                | Application                   | C-1                              | 3                                    |
| 5                             | Physiology-3                | Application                   | C-2                              | 3                                    |
| 6                             | Retina-1                    | Application                   | C-1                              | 2                                    |
| 7                             | Anatomy Muscle-3            | App/Analysis                  | C-1                              | 3                                    |
| 8                             | Lids & Adnexa-1             | App/Analysis                  | C-2                              | 3                                    |
| 9                             | Retina-2                    | App/Analysis                  | C-2                              | 3                                    |
| 10                            | Glaucoma -1                 | Application                   | C-2                              | 3                                    |
| 11                            | Glaucoma -2                 | Application                   | C-2                              | 3                                    |
| 12                            | Cornea-1                    | App/Analysis                  | C-2                              | 3                                    |
| 13                            | Cornea-2                    | App/Analysis                  | C-2                              | 3                                    |
| 14                            | Lens-1                      | App/Analysis                  | C-2                              | 4                                    |
| 15                            | Lens-2                      | App/Analysis                  | C-1/C-2                          | 3                                    |
| 16                            | Lens-3                      | Application                   | C-2                              | 2                                    |
| 17                            | Vitreo Retina-3             | App/Analysis                  | C-1/C-2                          | 3                                    |
| 18                            | Retina-4                    | Application                   | C-1                              | 2                                    |
| 19                            | Retina-5                    | Application                   | C-1                              | 2                                    |
| 20                            | Retina-6                    | Application                   | C-1                              | 3                                    |
| 21                            | Neuro Ophthal-1             | Application                   | C-1                              | 2                                    |
| 22                            | Lacrimal System-1           | App/Analysis                  | C-1                              | 2                                    |
| 23                            | Neuro Ophthal-2             | Application                   | C-1                              | 4                                    |
| 24                            | Lids & Adnexa-2             | Application                   | C-2                              | 2                                    |
| 25                            | Conjunctiva-1               | Application                   | C-1/C-2                          | 3                                    |
| 26                            | Conjunctiva-2               | Application                   | C-2/C-3                          | 4                                    |
| 27                            | Lacrimal System-2           | App/Analysis                  | C-2/C-3                          | 2                                    |
| 28                            | Glaucoma-3                  | App/Analysis                  | C-3                              | 4                                    |
| 29                            | Cornea-3                    | App/Analysis                  | C-3                              | 3                                    |
| 30                            | Uvea-1                      | App/Analysis                  | C-2                              | 3                                    |
| 31                            | Cornea-4                    | Analysis                      | C-2                              | 2                                    |
| 32                            | Squint-1                    | Application                   | C-2                              | 3                                    |
| 33                            | Squint-2                    | App/Analysis                  | C-2                              | 4                                    |
| 34                            | Squint-3                    | App/Analysis                  | C-2                              | 4                                    |
| 35                            | Refraction-1                | App/Analysis                  | C-2                              | 2                                    |
| 36                            | Orbit-1                     | App/Analysis                  | C-2                              | 3                                    |
| 37                            | Orbit-2                     | App/Analysis                  | C-2                              | 3                                    |
| 38                            | Uvea-2                      | App/Analysis                  | C-2                              | 4                                    |
| 39                            | Uvea-3                      | App/Analysis                  | C-2                              | 4                                    |
| 40                            | Lens-4                      | App/Analysis                  | C-2                              | 4                                    |
| 41                            | Retina-7                    | Application                   | C-2                              | 2                                    |
| 42                            | Hereditary diseases-1       | App/Analysis                  | C-2                              | 4                                    |
| 43                            | Ocular Therapeutics-1       | Application                   | C-2                              | 4                                    |
| 44                            | Visual Pathways-1           | App/Analysis                  | C-3                              | 4                                    |
| 45                            | Ocular Therapeutics-2       | Application                   | C-2                              | 3                                    |

**Topics covered in MCQs**

|     |                         |    |
|-----|-------------------------|----|
| 1.  | Anatomy eye             | 3  |
| 2.  | Physiology              | 3  |
| 3.  | Ocular therapeutics     | 2  |
| 4.  | Hereditary diseases eye | 1  |
| 5.  | Orbit                   | 2  |
| 6.  | Lens & adnexa           | 2  |
| 7.  | Lacrimal system         | 2  |
| 8.  | Conjunctiva             | 2  |
| 9.  | Cornea                  | 4  |
| 10. | Uvea                    | 3  |
| 11. | Glaucoma                | 3  |
| 12. | Lens                    | 4  |
| 13. | Vitreo Retina           | 7  |
| 14. | Neuro ophthalmology     | 2  |
| 15. | Visual pathways         | 1  |
| 16. | Squint                  | 3  |
| 17. | Refraction              | 1  |
|     | TOTAL                   | 45 |

## **Format for OSPE in Ophthalmology**

### **MBBS Fourth Professional Examination**

#### **OSPE Distribution (For each cycle)**

- **OSPE stations in total** **15**
- **One rest station**
- **Interactive stations** **04**
  - Marks at each station 10
  - Time at each station (mins) 04
  - Human resources 01 Internal  
01 External  
02 local observers
  - Total marks 40
- **Static (non observed ) Stations** **10**
  - Marks at each station 05
  - Time at each station (mins) 04
  - Total marks 50

#### **Marking system OSPE Examination**

- Total marks clinical 100
- OSPE total marks 90
- Internal assessment 10

#### **Detailed distribution of ophthalmic topic to be covered in non interactive OSPE**

##### **Set of 10 static OSPE stations**

| <b>Sr. No</b> | <b>Subject/Topic</b>                  | <b>OSPE questions</b> | <b>Percentage</b> |
|---------------|---------------------------------------|-----------------------|-------------------|
| <b>1.</b>     | Lid/Adnexa                            | 01                    | 10%               |
| <b>2.</b>     | Conjunctiva /Sclera                   | 01                    | 10%               |
| <b>3.</b>     | Cornea/Refractive Errors              | 01                    | 10%               |
| <b>4.</b>     | Orbit/Lacrimal apparatus              | 01                    | 10%               |
| <b>5.</b>     | Lens                                  | 02                    | 20%               |
| <b>6.</b>     | Glaucoma                              | 01                    | 10%               |
| <b>7.</b>     | Retina/ Optic Nerve/ Vitreous Humor   | 01                    | 10%               |
| <b>8.</b>     | Medical Ophthalmology / Uveitis       | 01                    | 10%               |
| <b>9.</b>     | Neurophthalmology/Injuries/Strabismus | 01                    | 10%               |
|               | <b>Total OSPE question</b>            | <b>10</b>             | <b>100%</b>       |

Thank You