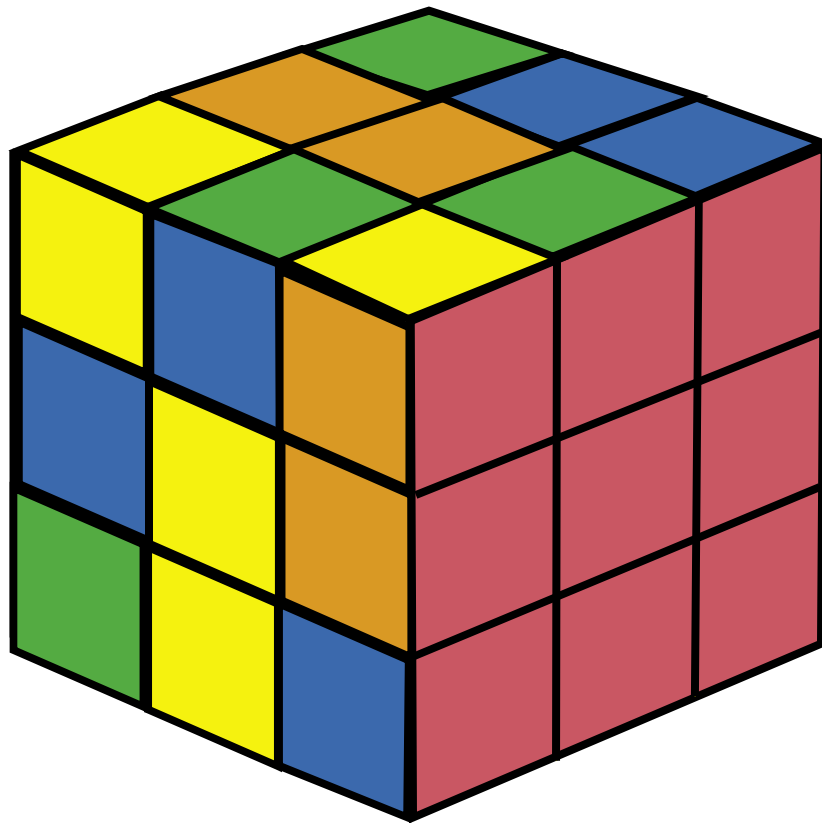


# DNB FINAL THEORY PAPERS (OPHTHALMOLOGY) 2011 - 2020



Source : [www.natboard.edu.in](http://www.natboard.edu.in)

Compiled by : Dr. Ashutosh Singh (M.B.B.S., D.O.)

# Table of Contents

2011 DEC PAPER 1 .....	3
2011 DEC PAPER 2 .....	4
2011 DEC PAPER 3 .....	5
2011 DEC PAPER 4 .....	6
2012 DEC PAPER 1 .....	7
2012 DEC PAPER 2 .....	8
2012 DEC PAPER 3 .....	9
2012 DEC PAPER 4 .....	10
2012 JUN PAPER 1 .....	11
2012 JUN PAPER 2 .....	12
2012 JUN PAPER 3 .....	13
2012 JUN PAPER 4 .....	14
2013 DEC PAPER 1 .....	15
2013 DEC PAPER 2 .....	17
2013 DEC PAPER 3 .....	19
2013 DEC PAPER 4 .....	21
2013 JUN PAPER 1 .....	23
2013 JUN PAPER 2 .....	25
2013 JUN PAPER 3 .....	27
2013 JUN PAPER 4 .....	29
2014 DEC PAPER 1 .....	31
2014 DEC PAPER 2 .....	33
2014 DEC PAPER 3 .....	35
2014 DEC PAPER 4 .....	37
2014 JUN PAPER 1 .....	39
2014 JUN PAPER 2 .....	41
2014 JUN PAPER 3 .....	42
2014 JUN PAPER 4 .....	43
2015 DEC PAPER 1 .....	45
2015 DEC PAPER 2 .....	47
2015 DEC PAPER 3 .....	49
2015 DEC PAPER 4 .....	51
2015 JUN PAPER 1 .....	53
2015 JUN PAPER 2 .....	55
2015 JUN PAPER 3 .....	57
2015 JUN PAPER 4 .....	59
2016 APR PAPER 1 .....	61
2016 APR PAPER 2 .....	62
2016 APR PAPER 3 .....	63

2016 APR PAPER 4 .....	64
2016 DEC PAPER 1 .....	65
2016 DEC PAPER 2 .....	67
2016 DEC PAPER 3 .....	69
2016 DEC PAPER 4 .....	71
2016 JUN PAPER 1 .....	73
2016 JUN PAPER 2 .....	75
2016 JUN PAPER 3 .....	77
2016 JUN PAPER 4 .....	79
2017 DEC PAPER 1 .....	81
2017 DEC PAPER 2 .....	83
2017 DEC PAPER 3 .....	85
2017 DEC PAPER 4 .....	87
2017 JUN PAPER 1 .....	89
2017 JUN PAPER 2 .....	90
2017 JUN PAPER 3 .....	91
2017 JUN PAPER 4 .....	92
2018 DEC PAPER 1 .....	93
2018 DEC PAPER 2 .....	95
2018 DEC PAPER 3 .....	98
2018 DEC PAPER 4 .....	100
2018 JUN PAPER 1 .....	103
2018 JUN PAPER 2 .....	105
2018 JUN PAPER 3 .....	107
2018 JUN PAPER 4 .....	109
2019 DEC PAPER 1 .....	111
2019 DEC PAPER 2 .....	113
2019 DEC PAPER 3 .....	115
2019 DEC PAPER 4 .....	117
2019 JUN PAPER 1 .....	119
2019 JUN PAPER 2 .....	121
2019 JUN PAPER 3 .....	123
2019 JUN PAPER 4 .....	125
2020 DEC PAPER 1 .....	127
2020 DEC PAPER 2 .....	133
2020 DEC PAPER 3 .....	139
2020 DEC PAPER 4 .....	145
2020 JUN PAPER 1 .....	151
2020 JUN PAPER 2 .....	153
2020 JUN PAPER 3 .....	155
2020 JUN PAPER 4 .....	157

FINAL EXAM  
DECEMBER 2011

NATIONAL BOARD OF EXAMINATIONS

**OPHTHALMOLOGY**

PAPER- I

Time : 3 hours  
Max. Marks : 100

OPH/D/11/26/I

**Attempt all questions in order.  
Each question carries 10 marks.**

- |     |   |         |
|-----|---|---------|
| 1.  | Discuss clinical features, pathogenesis and management of normal tension glaucoma.  | 3+3+4   |
| 2.  | Describe clinical manifestations, pathology, differential diagnosis and management of ocular basal cell carcinoma.  | 2+2+2+4 |
| 3.  | Discuss the vascular supply of optic nerve. Describe fluorescein angiographic details of optic nerve head. Give the relevance of optic nerve head blood supply in AION. | 4+3+3   |
| 4.  | Describe etiology, clinical features and management of Eales disease.   | 2+4+4   |
| 5.  | Discuss differential diagnosis of peripheral ulcerative keratitis. Briefly outline the workup in a patient with peripheral ulcerative keratitis.                        | 7+3     |
| 6.  | Describe etiopathogenesis, clinical features, prevention and management of keratomalacia.   | 2+2+2+4 |
| 7.  | Describe clinical features, investigations, histopathology and management of pleomorphic adenoma of lacrimal gland.   | 3+2+3+2 |
| 8.  | What is binocular vision? What are the grades of binocular vision and mention a few important tests for stereopsis?   | 2+4+4   |
| 9.  | Discuss etiology, clinical features and management strategies for diabetic macular oedema.  | 3+3+4   |
| 10. | Write about clinical presentation, investigations, histopathology and management of choroidal melanoma.   | 2+3+2+3 |



FINAL EXAM  
DECEMBER 2011

NATIONAL BOARD OF EXAMINATIONS

**OPHTHALMOLOGY**

PAPER- II

Time : 3 hours  
Max. Marks : 100

OPH/D/11/26/II

**Attempt all questions in order.  
Each question carries 10 marks.**

1. Discuss in detail about Vogt-Koyanagi Harada syndrome. 10
2. Classify allergic conjunctivitis. Discuss the pathogenesis, clinical features and treatment options in vernal kerato-conjunctivitis. 2+2+3+3
3. Describe muscle transplantation procedures in strabismus. 10
4. Discuss clinical features, complications and management of ocular alkali burns. 3+2+5
5. Write immunological aspect, clinical features, risk factors and management of corneal graft rejection. 3+2+3+2
6. Classify ectropion and describe management of paralytic lagophthalmos. 2+8
7. Describe the types of astigmatism and their management. 5+5
8. Discuss differential diagnosis of Leukocoria. 10
9. Describe causes of failed dacryocystorhinostomy. How will you manage such a case? 4+6
10. What are the surgical approaches to orbit? Describe indications, surgical steps and complications of lateral orbitotomy. 2+2+3+3



FINAL EXAM  
DECEMBER 2011

NATIONAL BOARD OF EXAMINATIONS

**OPHTHALMOLOGY**

PAPER- III

Time : 3 hours  
Max. Marks : 100

OPH/D/11/26/III

Attempt all questions in order.  
Each question carries 10 marks.

1. Describe basic principles and important techniques of lid reconstruction. 3+7
2. Draw labeled diagram of tear film. What is neuronal reflex arc and its relevance to development of new modality in the treatment of dry eye. 5+3+2
3. Discuss toxoplasmosis. 10
4. What is pure and impure Blow-out fracture? Describe mechanism, clinical features, investigations and management of Blow-out fracture. 2+3+2+2
5. Describe staging, risk factors and outline management principles of retinopathy of prematurity. 4+2+4
6. Describe clinical features and management of Traumatic Optic-neuropathy. 5+5
7. What is Botulinum toxin? Discuss its use in the management of various ocular diseases. 2+8
8. How do you classify giant retinal breaks? Describe its etiology, pre-operative evaluation and principles of management. 2+2+2+4
9. Discuss in detail about congenital glaucoma (clinical features and management options). 5+5
10. Write a note on "Kerato-prosthesis"? 10



**OPHTHALMOLOGY****PAPER- IV**

**Time : 3 hours**  
**Max. Marks : 100**

**OPH/D/11/26/IV**

**Attempt all questions in order.**  
**Each question carries 10 marks.**

- |     |  |       |
|-----|--|-------|
| 1.  | Draw a labeled diagram of the vertical section of eye lid. Describe anatomy of levator palpebrae superioris.                         | 4+6   |
| 2.  | Discuss formation and drainage of Aqueous humour.  | 10    |
| 3.  | Draw a labeled diagram of visual pathways and briefly write about the correlation between level of lesion and clinical presentation. | 10    |
| 4.  | Discuss role of anti-metabolites and immunosuppressive drugs in Ophthalmology.   | 10    |
| 5.  | Describe anatomy of macula of retina. Support your answer with suitable diagrams.  | 10    |
| 6.  | Discuss anatomy and physiology of vitreous. Write a brief note on etiopathogenesis of posterior vitreous detachment.                 | 4+4+2 |
| 7.  | What is Badal's principle? Discuss its relevance to focimetry?   | 5+5   |
| 8.  | Discuss various materials and designs of intraocular lenses.   | 5+5   |
| 9.  | Discuss National Programme for Control of Blindness.   | 10    |
| 10. | How will you evaluate visual function in a patient with opaque media?  | 10    |



FINAL EXAM  
DECEMBER 2012

NATIONAL BOARD OF EXAMINATIONS

**OPHTHALMOLOGY**

**PAPER – I**

Time : 3 hours

Max. Marks : 100

OPH/D/12/26/I

Attempt all questions in order.  
Each question carries 10 marks.

- |     |  |             |
|-----|--|-------------|
| 1.  | Describe briefly anatomy of choroid. Discuss the developmental basis of choroidal coloboma. Classify types of choroidal colobomas.   | 3+5+2       |
| 2.  | Classify fungal infections of the eye. Discuss in brief the presentation, diagnosis and specific management of fungal keratitis.   | 2+(3+2+3)   |
| 3.  | Give various milestones in vision development in a child. Enumerate four important tests for visual activity testing in preverbal children and children between 3-6 years with one merit and demerit of each test.   | 2+(2+2+2+2) |
| 4.  | Describe in brief four clinical uses of prisms in ophthalmology. What are Fresnel prisms and mention one important application of these types of prisms? Give principle of induction of prismatic effect through spectacle lens.   | 4+3+3       |
| 5.  | Describe the etiopathogenesis and histopathology of ocular surface squamous neoplasia (OSSN). Write briefly on the use of anti-metabolites in the management of OSSN.  | (2+4)+4     |
| 6.  | Write short note on lens development, anatomy, lens sutures and factors affecting lens transparency.   | 2+3+2+3     |
| 7.  | A patient who sustained corneo-scleral perforation in road traffic accident was admitted and repair was done. 3 days after the surgery he complained of photophobia and blurry vision in other eye. What is your diagnosis? How will you manage it? What are the histopathological findings expected in this case? | 2+4+4       |
| 8.  | Discuss the pharmacology, indications for use and adverse effects of botulinum toxins in Ophthalmology.  | 2+4+4       |
| 9.  | Enumerate the routes of drug delivery in eye. Mention four commonly used intravitreal drugs with their dosages and indications.  | 2+8         |
| 10. | Discuss the components of tear film and functions of each layer. Give Lemp's classification of dry eye syndrome.   | (3+3)+4     |

\*\*\*\*\*



FINAL EXAM  
DECEMBER 2012

NATIONAL BOARD OF EXAMINATIONS

**OPHTHALMOLOGY**

**PAPER – II**

Time : 3 hours  
Max. Marks : 100

OPH/D/12/26/II

Attempt all questions in order.  
Each question carries 10 marks.

- |     |  |           |
|-----|--|-----------|
| 1.  | Discuss the pre-operative assessment of entropion. Briefly discuss the surgical options for the correction of involuntional entropion.                         | 3+7       |
| 2.  | Discuss briefly various approaches in orbital surgery with specific indications in each approach. Enumerate four important complications of orbital surgery.   | 8+2       |
| 3.  | Write the definition of blindness as per WHO standards. Enumerate important causes of blindness as per 4 important surveys in India.                           | 2+8       |
| 4.  | Discuss endophthalmitis-vitreotomy study with respect to aim, design and outcomes.   | 3+3+4     |
| 5.  | Discuss the causes and presentation of pterygium. How will you manage it?  | 3+3+4     |
| 6.  | Discuss pathogenesis, clinical features, diagnosis, differential diagnosis and management of intermediate uveitis.   | 2+2+2+2+2 |
| 7.  | What is capsular block syndrome? Classify capsular block syndrome with respect to early, intra-operative and late causes. How are they avoided and/or managed? | 2+4+4     |
| 8.  | What are artificial drainage shunts? Write briefly about various drainage devices. Give indications and complications of these devices.                        | 1+6+3     |
| 9.  | Define clinically significant macular edema, high risk PDR and management of these conditions.   | 2+2+6     |
| 10. | What is microtropia? Discuss the types and clinical features of microtropia.   | 2+(4+4)   |

\*\*\*\*\*

FINAL EXAM  
DECEMBER 2012

NATIONAL BOARD OF EXAMINATIONS

**OPHTHALMOLOGY**

**PAPER – III**

Time : 3 hours

OPH/D/12/26/III

Max. Marks : 100

Attempt all questions in order.  
Each question carries 10 marks.

- |  |             |
|--|-------------|
| 1. Describe the clinical features and management of partially accommodative esotropia.   | 5+5         |
| 2. Write the causes, clinical features, diagnosis and surgical management of macular holes.  | 2+2+2+4     |
| 3. Describe the clinical features and clinicopathologic correlation of age related macular degeneration (ARMD). Describe the role of various modalities in the management of ARMD. | (2+3)+5     |
| 4. Describe the clinical characteristics and staging of retinopathy of prematurity (ROP). Write the criteria for its screening with management principles.                         | (2+2)+(3+3) |
| 5. Define gaze palsy. Discuss various forms of gaze palsy with their localization value.   | 2+(6+2)     |
| 6. What are the commonly used phakic IOL in refractive surgery? What material are they made of? What are the indications of these lenses?  | 3+4+3       |
| 7. List the various prostaglandin analogues available in the management of glaucoma. Give their mechanism of action, dose schedule and side effects.                               | 3+(2+2+3)   |
| 8. Give the international classification of retinoblastoma. Discuss the management of retinoblastoma with recent advances in detail.   | 3+7         |
| 9. Discuss the clinical features, diagnosis and management of acanthamoeba keratitis.  | 2+4+4       |
| 10. What are the minimum diagnostic criteria for Primary Open Angle Glaucoma (POAG)? Give severity classification of POAG with concept of target pressure?                         | 3+(3+4)     |

\*\*\*\*\*

FINAL EXAM  
DECEMBER 2012

NATIONAL BOARD OF EXAMINATIONS

**OPHTHALMOLOGY**

**PAPER – IV**

Time : 3 hours  
Max. Marks : 100

OPH/D/12/26/IV

**Attempt all questions in order.  
Each question carries 10 marks.**

- |     |   |           |
|-----|---|-----------|
| 1.  | Describe the applied anatomy of oculomotor nerve with the help of a diagram. Give causes of 3 <sup>rd</sup> nerve palsy with treatment outline. | 3+(4+3)   |
| 2.  | Write briefly about UBM and OCT in anterior segment diagnostics with potential limitations and clinical applications.                           | 5+5       |
| 3.  | Discuss the causes of unilateral cupping of disc.   | 10        |
| 4.  | What is "Reverse pupillary block glaucoma"? Give the clinical appearance, investigations and management of this glaucoma.                       | 2+(4+2+2) |
| 5.  | Discuss the principles of contrast sensitivity. Give various methods of contrast sensitivity testing and its role in ocular disorders.          | 2+(2+6)   |
| 6.  | What are the surgical spaces of the orbit? Compare and contrast ultrasonography Vs CT scan for orbital disease.                                 | 5+5       |
| 7.  | What is the role of laser in cataract surgery? Discuss its advantages with respect to conventional phaco-emulsification.                        | 5+5       |
| 8.  | What are multifocal IOL's and give principle of various types of multifocal IOL's. Give advantages and disadvantages of these IOL's.            | 3+(4+3)   |
| 9.  | Discuss clinical features and diagnostic tests to differentiate between retinoschisis and retinal detachment.                                   | 5+5       |
| 10. | List various aberrations of the eye. What are higher order aberrations and give basic principle of WF related refractive surgery?               | 5+(3+2)   |

\*\*\*\*\*

FINAL EXAM  
JUNE 2012

NATIONAL BOARD OF EXAMINATIONS

**OPHTHALMOLOGY**  
**PAPER-I**

Time : 3 hours  
Max. Marks : 100

OPH/J/12/26/I

**Attempt all questions in order.**  
**Each question carries 10 marks.**

1. Define range and amplitude of accommodation. Define manifest and latent hypermetropia. What are the different ways to uncover the latent hypermetropia? (2+2)+(2+2)+2
2. Describe clinical features, laboratory diagnosis, prevention and management of acanthamoeba keratitis. 3+2+1+4
3. Describe clinical manifestation, pathology, differential diagnosis and management of squamous cell carcinoma of conjunctiva. 2+2+2+4
4. Discuss clinical features, pathogenesis, differential diagnosis and management of primary congenital glaucoma. 2+2+2+4
5. Discuss etiopathogenesis, diagnosis and management of acute angle closure glaucoma. 3+3+4
6. Discuss ophthalmic manifestation of thyrotoxicosis. 10
7. Define scotoma. How do you differentiate between negative and positive scotoma? Discuss approach to diagnosis in a patient presenting with left hemianopia. 1+3+6
8. Give differential diagnosis of painless progressive proptosis in a 35 year old man. Describe clinical features, histopathology and management of orbital cavernous haemangioma. 3+(2+2+3)
9. Describe clinical features, etiology, investigation, various modalities in management of Branch Retinal Vein occlusion. 2+2+2+4
10. Discuss clinical features, investigation, sequelae and management of retained intraocular metallic foreign body. 2+3+2+3

\*\*\*\*\*

*POSSESSION/USE OF CELL PHONES OR ANY SUCH ELECTRONIC GADGETS IS NOT PERMITTED INSIDE THE EXAMINATION HALL.*



FINAL EXAM  
JUNE 2012

NATIONAL BOARD OF EXAMINATIONS

**OPHTHALMOLOGY**  
**PAPER- II**

Time : 3 hours  
Max. Marks : 100

OPH/J/12/26/II

**Attempt all questions in order.**  
**Each question carries 10 marks.**

1. Discuss the techniques for evaluation of visual acuity from birth to 3 years of age. 10
2. What is suppression in relation to strabismus? Discuss diagnosis and management strategies of suppression. 2+(4+4)
3. Discuss indications, surgical procedure, complications and advances in endothelial keratoplasty. 2+3+3+2
4. Describe relevant nasal anatomy in relation to endonasal DCR. Give advantages and disadvantages of endonasal DCR versus external DCR. 3+7
5. Discuss clinical features, diagnosis, complication and management of uveitis associated with juvenile rheumatoid arthritis. 2+2+2+4
6. Classify scleritis. Discuss clinical manifestations, investigations and management of scleritis and its complications. 2+(2+3+3)
7. Describe etiology, clinical features, investigation and management of 6<sup>th</sup> Nerve palsy. 2+2+2+4
8. What are Femtosecond Lasers? Discuss the uses of Femtolaser systems in ophthalmic surgery. 4+6
9. Discuss the investigations and management of a 55 year old diabetic patient presenting with neovascular glaucoma and cataract with a visual acuity of 3/60 and IOP of 46mm Hg. 3+7
10. Discuss the workup of a patient planned for refractive surgery. Give relevance of each investigation. What are the absolute contra-indications for Laser refractive surgery? 5+2+3

\*\*\*\*\*

*POSSESSION/USE OF CELL PHONES OR ANY SUCH ELECTRONIC GADGETS IS NOT PERMITTED INSIDE THE EXAMINATION HALL*

FINAL EXAM  
JUNE 2012

NATIONAL BOARD OF EXAMINATIONS

**OPHTHALMOLOGY**  
**PAPER- III**

Time : 3 hours  
Max. Marks : 100

OPH/J/12/26/III

**Attempt all questions in order.**  
**Each question carries 10 marks.**

1. Discuss the intra-operative and postoperative management of unilateral congenital cataract in a 2 year old child. 10
2. Discuss the differential diagnosis and management of shallow anterior chamber on the first post operative day after trabeculectomy. 5+5
3. Write briefly on ocular involvement in cysticercosis and briefly outline management of ocular cysticercosis. 6+4
4. Discuss clinical features, investigations and management of a case of medial orbital wall fracture. 2+2+6
5. Describe with a diagram the management of a 22 year old patient presenting with a corneo-scleral perforation after road traffic accident 2 hours back. 10
6. Draw a labeled diagram of cut section of lid in relation to involuntional ectropion. Describe etiopathogenesis, clinical features, diagnosis and surgical management of involuntional ectropion. 3+7
7. Draw a labeled diagram of pupillary reflex pathway. Discuss approach to diagnosis of Anisocoria. 5+5
8. Discuss role of silicon oil and expandable gases in management of retinal detachment. 5+5
9. Discuss the immediate management of a 60 year old diabetic patient who has collapsed after injection of dye during fluorescein angiography. 10
10. Discuss etiology, clinical feature, diagnosis and management of optic neuritis in a 40 year old female. 2+2+2+4

\*\*\*\*\*

*POSSESSION/USE OF CELL PHONES OR ANY SUCH ELECTRONIC GADGETS IS NOT PERMITTED INSIDE THE EXAMINATION HALL*

FINAL EXAM  
JUNE 2012

NATIONAL BOARD OF EXAMINATIONS

**OPHTHALMOLOGY**  
**PAPER- IV**

**Time : 3 hours**

OPH/J/12/26/IV

**Max. Marks : 100**

**Attempt all questions in order.**  
**Each question carries 10 marks.**

1. Give labeled diagram of optics of 90D lens for retinal examination. Give the advantage/disadvantage of retinal examination with respect to use of 20D lens. 5+5
2. Discuss the principle of Contrast Sensitivity (CS). Give various methods of CS testing and its role in ocular disorders. 2+(2+6)
3. Discuss the different modalities of measurement of corneal thickness and role of corneal thickness in glaucoma diagnosis. 6+4
4. Discuss principle of Refractive and Diffractive Intraocular Lenses (IOLs). Give advantages and disadvantages of multifocal IOLs. 5+5
5. Enumerate the causes of childhood blindness and measures to prevent childhood blindness. 4+6
6. Enumerate various preservatives used in ophthalmic topical drugs. Discuss their ocular side effects. 4+6
7. Enumerate the principle, advantages and disadvantages of various modalities for anterior segment imaging. 4+3+3
8. Draw cross section, labeled diagram of lacrimal sac showing relation of orbicularis oculi muscle to sac. Discuss lacrimal pump. 4+6
9. Discuss the anatomy of macula. Enumerate relevant points of difference between retinal anatomy at macula and peripheral retina. 5+5
10. Draw labeled diagram of cavernous sinus. Describe clinical features of cavernous sinus thrombosis. 4+6

\*\*\*\*\*

*POSSESSION/USE OF CELL PHONES OR ANY SUCH ELECTRONIC GADGETS IS NOT PERMITTED INSIDE THE EXAMINATION HALL*

**OPHTHALMOLOGY**

**PAPER – I**

OPH /D/13/26/I

Time : 3 hours  
Max. Marks : 100

**IMPORTANT INSTRUCTIONS**

- This question paper consists of 10 questions divided into Part 'A' and Part 'B', each part containing 5 questions.
- Answers to questions of Part 'A' and Part 'B' are to be strictly attempted in separate answer sheet(s) and the main + supplementary answer sheet(s) used for each part must be tagged separately.
- Answers to questions of Part 'A' attempted in answer sheet(s) of Part 'B' or vice versa shall not be evaluated.
- Answer sheet(s) of Part 'A' and Part 'B' are not to be tagged together.
- Part 'A' and Part 'B' should be mentioned only on the covering page of the respective answer sheet(s).
- Attempt all questions in order.
- Each question carries 10 marks.
- Read the question carefully and answer to the point neatly and legibly.
- Do not leave any blank pages between two answers.
- Indicate the question number correctly for the answer in the margin space.
- Answer the parts of a single question together.
- Start the answer to a question on a fresh page or leave adequate space between two answers.
- Draw table/diagrams/flowcharts wherever appropriate.

**PART A**

1. a) Define low vision as per WHO Criteria 2+2+2+4  
b) How do you evaluate a person with low vision?  
c) What are the goals of visual rehabilitation?  
d) Enumerate and discuss various management options of low vision.
2. What is the principle of Optical Coherence Tomography? What are the types of OCTs available? What are the diagnostic and therapeutic issues of OCT in management of macular pathology? 2+2+(3+3)
3. What are the 3 landmark studies in establishing management protocols in Diabetic retinopathy? What are the conclusions of each of them? 1+(3+3+3)
4. Define essential Infantile esotropia? Give at least four differential diagnosis of essential infantile esotropia and give at least two differentiating features among them. 2+8
5. Write the ocular manifestations, systemic associations and management of Behcet's disease including recent drugs available for treatment. 3+1+6

P.T.O.



**OPHTHALMOLOGY**

**PAPER – I**

**Please read carefully the important instructions mentioned on Page ‘1’**

- Answers to questions of Part ‘A’ and Part ‘B’ are to be strictly attempted in separate answer sheet(s) and the main + supplementary answer sheet(s) used for each part must be tagged separately.
- Answers to questions of Part ‘A’ attempted in answer sheet(s) of Part ‘B’ or vice versa shall not be evaluated.

**PART B**

6. What are the different effects of keratorefractive surgery? Give short description of each. 10
7. What are the common causes of anterior uveitis in children? What are the common clinical presentations and management of Juvenile Spondylo-arthropathy. 4+(4+2)
8. What is ectopia lentis? Discuss clinical features and complete management of spherophakia and associated problems in a patient with Weill – Marchesani syndrome. 2+8
9. Describe the pathology of “malignant melanoma of choroid”. How does the pathology influence the prognosis? 10
10. Define in relation to Phacoemulsification: 2+2+2+4
- a) Flow rate and Vacuum
  - b) Pulse mode and Burst mode
  - c) Rise time and effective phaco time
  - d) Surge (causes and prevention)

\*\*\*\*\*



**OPHTHALMOLOGY**

**PAPER – II**

OPH /D/13/26/II

Time : 3 hours  
Max. Marks : 100

**IMPORTANT INSTRUCTIONS**

- This question paper consists of 10 questions divided into Part 'A' and Part 'B', each part containing 5 questions.
- Answers to questions of Part 'A' and Part 'B' are to be strictly attempted in separate answer sheet(s) and the main + supplementary answer sheet(s) used for each part must be tagged separately.
- Answers to questions of Part 'A' attempted in answer sheet(s) of Part 'B' or vice versa shall not be evaluated.
- Answer sheet(s) of Part 'A' and Part 'B' are not to be tagged together.
- Part 'A' and Part 'B' should be mentioned only on the covering page of the respective answer sheet(s).
- Attempt all questions in order.
- Each question carries 10 marks.
- Read the question carefully and answer to the point neatly and legibly.
- Do not leave any blank pages between two answers.
- Indicate the question number correctly for the answer in the margin space.
- Answer the parts of a single question together.
- Start the answer to a question on a fresh page or leave adequate space between two answers.
- Draw table/diagrams/flowcharts wherever appropriate.

**PART A**

1. Broadly classify viscoelastic substances used in ophthalmic surgery. What is soft shell technique in cataract surgery and enlist important precautions while performing phacoemulsification in cases with low corneal endothelial counts. 2+(4+4)
2. Describe in detail complications of blade-based LASIK. Classify them as vision-threatening and non-vision threatening in your description. 5+5
3. Discuss differential diagnosis of unilateral optic disc edema. How will you differentiate each condition? 10
4. Describe Faden's operation as applied in management of strabismus. 10
5. Describe in details management of diabetic maculopathy. 10

P.T.O.

**OPHTHALMOLOGY**

**PAPER – II**

**Please read carefully the important instructions mentioned on Page '1'**

- Answers to questions of Part 'A' and Part 'B' are to be strictly attempted in separate answer sheet(s) and the main + supplementary answer sheet(s) used for each part must be tagged separately.
- Answers to questions of Part 'A' attempted in answer sheet(s) of Part 'B' or vice versa shall not be evaluated.

**PART B**

6. Describe in detail diagnosis and management of idiopathic orbital inflammatory disease. 10
7. Describe the mechanism, causes, presentation and management of senile ectropion. 2+2+2+4
8. What are the types, indications and complications of intraocular steroids? 2+4+4
9. Define open angle glaucoma suspect. Discuss the management options and follow up. What are the Global Indices in automated perimetry? 2+4+4
10. Discuss the molecular genetics, clinical features, tests of visual functions in typical Retinitis Pigmentosa. 2+4+4

\*\*\*\*\*



**OPHTHALMOLOGY**

**PAPER – III**

OPH /D/13/26/III

Time : 3 hours

Max. Marks : 100

**IMPORTANT INSTRUCTIONS**

- This question paper consists of 10 questions divided into Part 'A' and Part 'B', each part containing 5 questions.
- Answers to questions of Part 'A' and Part 'B' are to be strictly attempted in separate answer sheet(s) and the main + supplementary answer sheet(s) used for each part must be tagged separately.
- Answers to questions of Part 'A' attempted in answer sheet(s) of Part 'B' or vice versa shall not be evaluated.
- Answer sheet(s) of Part 'A' and Part 'B' are not to be tagged together.
- Part 'A' and Part 'B' should be mentioned only on the covering page of the respective answer sheet(s).
- Attempt all questions in order.
- Each question carries 10 marks.
- Read the question carefully and answer to the point neatly and legibly.
- Do not leave any blank pages between two answers.
- Indicate the question number correctly for the answer in the margin space.
- Answer the parts of a single question together.
- Start the answer to a question on a fresh page or leave adequate space between two answers.
- Draw table/diagrams/flowcharts wherever appropriate.

**PART A**

1. What is congenital ptosis? Describe the evaluation of ptosis and the management of congenital ptosis. 2+(4+4)
2. Give ideal requirements for setting of eye bank. What are the functions of eye bank? Mention the various medias with their constituents for cornea preservation. 3+2+5
3. A two year old child presents with cataract both eyes. Discuss the possible causative factors and its management. 5+5
4. Discuss the pathology, clinical features and management of pseudo-exfoliation syndrome. 2+4+4
5. What is vision 2020? What are the diseases covered under this scheme. Briefly describe its functioning strategy. 2+3+5



**OPHTHALMOLOGY****PAPER – III****Please read carefully the important instructions mentioned on Page '1'**

- Answers to questions of Part 'A' and Part 'B' are to be strictly attempted in separate answer sheet(s) and the main + supplementary answer sheet(s) used for each part must be tagged separately.
- Answers to questions of Part 'A' attempted in answer sheet(s) of Part 'B' or vice versa shall not be evaluated.

**PART B**

6. Give different classifications of chemical injuries of eye with their prognostic significance. Give basic outline in the management of moderate to severe chemical injury in acute and late reparative phase. 5+5
7. What is the difference between retinoschisis and retinal detachment? Discuss the various types of retinoschisis and its management. 3+(4+3)
8. Discuss the management of metallic intraocular foreign body. What are the ophthalmological effects if it is not removed? 5+5
9. What are different classification of uveitis? Discuss briefly about the granulomatous uveitis and its management. 3+(3+4)
10. What is the role of intraocular corticosteroids in retinal vein occlusions? Discuss the findings of SCORE and Posurdex trial in venous occlusions. 4+(3+3)

\*\*\*\*\*

**OPHTHALMOLOGY**

**PAPER – IV**

**OPH /D/13/26/IV**

Time : 3 hours

Max. Marks : 100

**IMPORTANT INSTRUCTIONS**

- This question paper consists of 10 questions divided into Part 'A' and Part 'B', each part containing 5 questions.
- Answers to questions of Part 'A' and Part 'B' are to be strictly attempted in separate answer sheet(s) and the main + supplementary answer sheet(s) used for each part must be tagged separately.
- Answers to questions of Part 'A' attempted in answer sheet(s) of Part 'B' or vice versa shall not be evaluated.
- Answer sheet(s) of Part 'A' and Part 'B' are not to be tagged together.
- Part 'A' and Part 'B' should be mentioned only on the covering page of the respective answer sheet(s).
- Attempt all questions in order.
- Each question carries 10 marks.
- Read the question carefully and answer to the point neatly and legibly.
- Do not leave any blank pages between two answers.
- Indicate the question number correctly for the answer in the margin space.
- Answer the parts of a single question together.
- Start the answer to a question on a fresh page or leave adequate space between two answers.
- Draw table/diagrams/flowcharts wherever appropriate.

**PART A**

1. Draw a diagram of angle of anterior chamber. Discuss the grading and various methods of gonioscopy. 4+(3+3)
2. Give clinical presentation, causes, diagnostic modality and treatment options in benign intracranial hypertension. 2+3+2+3
3. What is endophthalmitis? What are the precautions to be taken to prevent post operative endophthalmitis? 2+8
4. Discuss the metabolism of crystalline lens. Mention the factors responsible for cataract formation. What is the change that occurs in diabetic aetiology? 4+4+2
5. What are the anti-metabolites used in Ophthalmology? Discuss their clinical uses and side effects. 3+(3+4)



**OPHTHALMOLOGY**

**PAPER – IV**

**Please read carefully the important instructions mentioned on Page '1'**

- Answers to questions of Part 'A' and Part 'B' are to be strictly attempted in separate answer sheet(s) and the main + supplementary answer sheet(s) used for each part must be tagged separately.
- Answers to questions of Part 'A' attempted in answer sheet(s) of Part 'B' or vice versa shall not be evaluated.

**PART B**

6. What is Prism? Explain the refraction of light through a prism. What are the uses of prism in ophthalmological practice? 2+4+4
7. Define LASER. Discuss its effects in ocular tissues and how is it useful in treating glaucomas. 2+(4+4)
8. What is accommodation? Explain its clinical importance with the help of diagram(s). 2+(3+5)
9. What is Sturm conoid? Explain its clinical importance with the help of diagram(s). 3+(3+4)
10. Discuss the mechanism of action, preparation and clinical uses of Botulinum toxin. Also enumerate two contraindications for its use in Ophthalmology. (2+2+4)+2

\*\*\*\*\*

FINAL EXAM  
JUNE 2013

NATIONAL BOARD OF EXAMINATIONS

**OPHTHALMOLOGY**

**PAPER –I**

OPH/J/13/26/1

Time : 3 hours  
Max. Marks : 100

**IMPORTANT INSTRUCTIONS**

- This question paper consists of 10 questions divided into Part 'A' and Part 'B', each part containing 5 questions.
- Answers to questions of Part 'A' and Part 'B' are to be strictly attempted in separate answer sheet(s) and the main + supplementary answer sheet(s) used for each part must be tagged separately.
- Answers to questions of Part 'A' attempted in answer sheet(s) of Part 'B' or vice versa shall not be evaluated.
- Answer sheet(s) of Part 'A' and Part 'B' are not to be tagged together.
- Part 'A' and Part 'B' should be mentioned only on the covering page of the respective answer sheet(s).
- Attempt all questions in order.
- Each question carries 10 marks.

**PART A**

- |    |  |           |
|----|--|-----------|
| 1. | Enumerate the conditions associated with corneal neovascularization. Briefly discuss the mechanism and various treatment modalities with their rationale of treatment in the management of this condition. | 3+3+4     |
| 2. | Give principle of keratometry. What are the types of keratometers and basic difference between them? Give typical keratometric features in keratoconus.  | 4+3+3     |
| 3. | Briefly write on the development of crystalline lens. Enlist the biochemical mechanism of cataractogenesis. Briefly write about various congenital and developmental anomalies of lens.                    | 3+3+4     |
| 4. | Discuss all the possible ocular injuries with a cricket ball to the eye in a 20 year old male. Give management of traumatic retinal disorders.   | 5+5       |
| 5. | Describe AV pattern deviations. Discuss etiology, clinical features and management of these deviations.  | 2+(2+3+3) |

P.T.O

**OPHTHALMOLOGY****PAPER –I**

**Please read carefully the important instructions mentioned on Page '1'**

**PART B**

- |     |   |           |
|-----|---|-----------|
| 6.  | What are the common tumors of optic nerve in adults? Give clinical features to differentiate them clinically and give salient pathologic features of these tumours. | 3+2+5     |
| 7.  | What are spherical aberrations? How do the spectacle lenses induce these aberrations? What modifications are done to minimize these spectacle induced aberrations?  | 3+3+4     |
| 8.  | Discuss clinical features, classification, investigations and management of diabetic macular edema.   | 3+2+2+3   |
| 9.  | Discuss in detail the ocular manifestations of AIDS.  | 10        |
| 10. | What is Horner's syndrome? Discuss clinical features, diagnosis and management of this syndrome.  | 1+(3+3+3) |

\*\*\*\*\*



FINAL EXAM  
JUNE 2013

NATIONAL BOARD OF EXAMINATIONS

OPHTHALMOLOGY

PAPER –II

OPHTH/J/13/26/II

Time : 3 hours

Max. Marks : 100

IMPORTANT INSTRUCTIONS

- This question paper consists of 10 questions divided into Part 'A' and Part 'B', each part containing 5 questions.
- Answers to questions of Part 'A' and Part 'B' are to be strictly attempted in separate answer sheet(s) and the main + supplementary answer sheet(s) used for each part must be tagged separately.
- Answers to questions of Part 'A' attempted in answer sheet(s) of Part 'B' or vice versa shall not be evaluated.
- Answer sheet(s) of Part 'A' and Part 'B' are not be tagged together.
- Part 'A' and Part 'B' should be mentioned only on the covering page of the respective answer sheet(s).
- Attempt all questions in order.
- Each question carries 10 marks.

PART A

- |    |   |         |
|----|---|---------|
| 1. | What are the factors affecting the SIA (Surgery Induced Astigmatism). How do you manage these cases having pre-operative astigmatism during the surgery for cataract. | 5+5     |
| 2. | Give indications of surgery for pediatric cataract. Outline complete management and specific surgical challenges in a 2 year old child with unilateral cataract.      | 3+3+4   |
| 3. | What are femtosecond Lasers? What are the current indications of femtosecond Lasers in corneal refractive surgery? What is opaque bubble Laser?                       | 3+5+2   |
| 4. | How do you diagnose severe ocular surface disease? Discuss causes and management of these entities, when existing in unilateral and bilateral manner.                 | 3+(3+4) |
| 5. | Discuss clinical features, differential diagnosis and management of metastatic endophthalmitis in a 15 year old boy.  | 4+3+3   |

P.T.O

FINAL EXAM  
JUNE 2013

NATIONAL BOARD OF EXAMINATIONS

OPHTHALMOLOGY

PAPER –II

Please read carefully the important instructions mentioned on Page '1'

PART B

- |     |  |                 |
|-----|--|-----------------|
| 6.  | Define flow rate, vacuum, rise time, surge and duty cycle in phacoemulsification surgery. What are the basic principles in ultrasonic power modulations and advantages of these modulations? | (1+1+1+1+1)+3+2 |
| 7.  | Discuss clinical features, diagnosis and management of intraocular and extraocular cysticercosis.  | 3+3+4           |
| 8.  | Discuss clinical features, differential diagnosis and management of lid tumor.   | 3+3+4           |
| 9.  | Write clinical features and management of retinal detachment with giant retinal tear in a 22 year old boy with Marfan's Syndrome.  | 3+7             |
| 10. | Write diagnostic features of glaucomatous visual field defect on automated perimetry (30-2).   | 10              |

\*\*\*\*\*

FINAL EXAM  
JUNE 2013

NATIONAL BOARD OF EXAMINATIONS

**OPHTHALMOLOGY**

**PAPER –III**

OPHTH/J/13/26/III

Time : 3 hours  
Max. Marks : 100

**IMPORTANT INSTRUCTIONS**

- This question paper consists of 10 questions divided into Part 'A' and Part 'B', each part containing 5 questions.
- Answers to questions of Part 'A' and Part 'B' are to be strictly attempted in separate answer sheet(s) and the main + supplementary answer sheet(s) used for each part must be tagged separately.
- Answers to questions of Part 'A' attempted in answer sheet(s) of Part 'B' or vice versa shall not be evaluated.
- Answer sheet(s) of Part 'A' and Part 'B' are not to be tagged together.
- Part 'A' and Part 'B' should be mentioned only on the covering page of the respective answer sheet(s).
- Attempt all questions in order.
- Each question carries 10 marks.

**PART A**

- |    |   |       |
|----|---|-------|
| 1. | Describe the clinical features and management of intermittent divergent squint.   | 3+7   |
| 2. | How you will diagnose diabetic macular edema? Discuss its investigation and management.   | 2+3+5 |
| 3. | Describe the pathophysiology of vernal keratoconjunctivitis (VKC) correlating with clinical picture and rationale of treatment. | 4+3+3 |
| 4. | What are the clinical features of blow out fracture? Discuss its investigation and management.                                  | 2+2+6 |
| 5. | What are the causes of posterior capsular rupture and how you will manage it in a phacoemulsification surgery?                  | 5+5   |

P.T.O

1/2

**OPHTHALMOLOGY****PAPER –III**

**Please read carefully the important instructions mentioned on Page '1'**

**PART B**

- |     |  |         |
|-----|--|---------|
| 6.  | Define complicated cataract. What are the various causes for it? How will you manage such cases?   | 2+4+4   |
| 7.  | What are the minimum criteria for Primary Open Angle Glaucoma (POAG)? Give severity classification of POAG with concept of target pressure.  | 3+7     |
| 8.  | What are various clinical features and complications of acute attack of anterior uveitis? Discuss its management.                            | (2+3)+5 |
| 9.  | What is amblyopia? Explain the concept of critical period in development of vision. Outline the principles of treating strabismic amblyopia. | 4+3+3   |
| 10. | Discuss pathophysiology and management of ocular toxoplasmosis.  | 7+3     |

\*\*\*\*\*

FINAL EXAM  
JUNE 2013

NATIONAL BOARD OF EXAMINATIONS

**OPHTHALMOLOGY**

**PAPER –IV**

**OPHTHO/J/13/26/IV**

Time : 3 hours  
Max. Marks : 100

**IMPORTANT INSTRUCTIONS**

- This question paper consists of 10 questions divided into Part 'A' and Part 'B', each part containing 5 questions.
- Answers to questions of Part 'A' and Part 'B' are to be strictly attempted in separate answer sheet(s) and the main + supplementary answer sheet(s) used for each part must be tagged separately.
- Answers to questions of Part 'A' attempted in answer sheet(s) of Part 'B' or vice versa shall not be evaluated.
- Answer sheet(s) of Part 'A' and Part 'B' are not be tagged together.
- Part 'A' and Part 'B' should be mentioned only on the covering page of the respective answer sheet(s).
- Attempt all questions in order.
- Each question carries 10 marks.

**PART A**

- |    |   |         |
|----|---|---------|
| 1. | What is the principle of Ocular Coherence Tomography (OCT). What are its uses in corneal and retinal diseases?    | 2+(4+4) |
| 2. | What are the various types of anesthesia used for cataract surgery? Describe briefly merits and demerits of each. | 2+(4+4) |
| 3. | Describe optics of 'Jack in the Box' phenomenon. How can you prevent it?  | 5+5     |
| 4. | Describe the anatomy of cavernous sinus. Name all the structures passing through it.                              | 5+5     |
| 5. | Discuss the role of genetics in Ophthalmology.  | 10      |

P.T.O



**OPHTHALMOLOGY****PAPER -IV**

**Please read carefully the important instructions mentioned on Page '1'**

**PART B**

6. What is Scheimpflug's principle? How is it useful in Ophthalmology? Name the appliance which uses this principle. 4+4+2
7. To establish an ocular microbiology lab, which all medias will be needed? Name the diseases in which each of these media are useful? 6+4
8. What are viscoelastics? How do you classify them? Briefly give the indications of each and their side effects. 1+3+(4+2)
9. Describe the pupillary pathway of the eye. Write in brief about the lesions in light near dissociations and its implications. 5+5
10. What is a cross cylinder? Where all is it used during refractions? How can you create a cross cylinder by using lenses from the trial set, please explain giving an example. 2+4+4

\*\*\*\*\*



**OPHTHALMOLOGY**

**PAPER – I**

OPH/D/14/26/I

Time : 3 hours  
Max. Marks : 100

**IMPORTANT INSTRUCTIONS**

- This question paper consists of 10 questions divided into Part 'A' and Part 'B', each part containing 5 questions.
- Answers to questions of Part 'A' and Part 'B' are to be strictly attempted in separate answer sheet(s) and the main + supplementary answer sheet(s) used for each part must be tagged separately.
- Answers to questions of Part 'A' attempted in answer sheet(s) of Part 'B' or vice versa shall not be evaluated.
- Answer sheet(s) of Part 'A' and Part 'B' are not to be tagged together.
- Part 'A' and Part 'B' should be mentioned only on the covering page of the respective answer sheet(s).
- Attempt all questions in order.
- Each question carries 10 marks.
- Read the question carefully and answer to the point neatly and legibly.
- Do not leave any blank pages between two answers.
- Indicate the question number correctly for the answer in the margin space.
- Answer all the parts of a single question together.
- Start the answer to a question on a fresh page or leave adequate space between two answers.
- Draw table/diagrams/flowcharts wherever appropriate.

**PART A**

Write short notes on:

1. a) What is Visual Acuity (VA)? 2+2+2+4  
b) How do you measure visual acuity in children?  
c) What are the shortcomings of testing VA by Snellen's Chart?  
d) Describe in detail other modalities of visual acuity assessment with their advantages over the use of Snellen's chart.
2. Define Retinoscopy. What are its principles and its types? 1+3+6  
What inferences are drawn while doing retinoscopy with plane and concave mirrors?
3. a) Anatomy of the superior oblique muscle 2+2+6  
b) Mechanism of its muscle actions in various directions of gaze.  
c) Management of unilateral and bilateral superior oblique palsy.
4. Genetics, pathophysiology, differential diagnosis and 2+2+3+3  
management of primary congenital glaucoma.
5. Structure & anatomy, embryology and management of 3+3+4  
congenital abnormalities of iris.

P.T.O.



**OPHTHALMOLOGY****PAPER – I**

**Please read carefully the important instructions mentioned on Page '1'**

- *Answers to questions of Part 'A' and Part 'B' are to be strictly attempted in separate answer sheet(s) and the main + supplementary answer sheet(s) used for each part must be tagged separately.*
- *Answers to questions of Part 'A' attempted in answer sheet(s) of Part 'B' or vice versa shall not be evaluated.*

**PART B**

6. a) Anatomy of the crystalline lens. 3+3+4  
b) Its physiology and how it remains clear.  
c) Its embryological development with suitable diagram(s).
7. Techniques, role, indications and advantages or 2+2+2+4  
disadvantages of periocular and intraocular steroids.
8. a) Discuss the microbiological profile in infective 3+3+4  
endophthalmitis with their antibiotic sensitivity profile.  
b) Give doses and combinations of preferred intravitreal  
antibiotics.  
c) What is the normal ocular flora?
9. Draw labeled diagram(s) depicting walls of the orbit. Describe 3+3+4  
in detail the medial wall of the orbit. Describe the applied  
anatomy of the optic canal.
10. What is incidence and prevalence of a disease? How will you (2+2)+6  
calculate sample size and plan survey for cataract blindness?

\*\*\*\*\*



OPHTHALMOLOGY

## PAPER – II

**Please read carefully the important instructions mentioned on Page '1'**

- Answers to questions of Part 'A' and Part 'B' are to be strictly attempted in separate answer sheet(s) and the main + supplementary answer sheet(s) used for each part must be tagged separately.
- Answers to questions of Part 'A' attempted in answer sheet(s) of Part 'B' or vice versa shall not be evaluated.

PART B

6. Pre-operative assessment of a case of entropion & discuss three surgical options of correction of involutional entropion. 3+7
7. Enumerate the "stromal corneal dystrophies", their pathology, clinical features and management. 2+2+2+4
8. What is advanced glaucoma? Give pathogenesis of glaucomatous ocular damage. How will you follow up a case of advanced glaucoma? What are the various treatment options? 2+2+2+4
9. Describe clinical and laboratory diagnosis of trachoma. Discuss its management, complications & prophylaxis. What is SAFE strategy? 4+(2+2+1)+1
10. What is physiological lacrimal pump? Describe clinical evaluation in a case of epiphora. 2+8

\*\*\*\*\*





**OPHTHALMOLOGY**

**PAPER – II**

OPH/D/14/26/II

Time : 3 hours  
Max. Marks : 100

**IMPORTANT INSTRUCTIONS**

- This question paper consists of 10 questions divided into Part 'A' and Part 'B', each part containing 5 questions.
- Answers to questions of Part 'A' and Part 'B' are to be strictly attempted in separate answer sheet(s) and the main + supplementary answer sheet(s) used for each part must be tagged separately.
- Answers to questions of Part 'A' attempted in answer sheet(s) of Part 'B' or vice versa shall not be evaluated.
- Answer sheet(s) of Part 'A' and Part 'B' are not to be tagged together.
- Part 'A' and Part 'B' should be mentioned only on the covering page of the respective answer sheet(s).
- Attempt all questions in order.
- Each question carries 10 marks.
- Read the question carefully and answer to the point neatly and legibly.
- Do not leave any blank pages between two answers.
- Indicate the question number correctly for the answer in the margin space.
- Answer all the parts of a single question together.
- Start the answer to a question on a fresh page or leave adequate space between two answers.
- Draw table/diagrams/flowcharts wherever appropriate.

**PART A**

Write short notes on:

1. Pathology of dry and wet age related macular degeneration. 5+5
2. a) Differences between an adult and paediatric eye. 3+4+2+1  
b) Precautions to be observed in doing paediatric cataract surgery and why?  
c) What is the relationship between paediatric cataract surgery and glaucoma?  
d) Outline complete management of unilateral congenital cataract.
3. What is the nature of biochemical abnormality in "homocystinuria"? Discuss its ocular & systemic manifestations, genetics and management. 3+(4+2+1)
4. Discuss various IOL power calculation formulae and how will you calculate IOL power in post refractive surgery patient? 7+3
5. Grading, investigations, complications and management of "traumatic hyphema". 2+2+2+4

P.T.O.





**OPHTHALMOLOGY**

**PAPER – III**

OPH/D/14/26/III

Time : 3 hours

Max. Marks : 100

**IMPORTANT INSTRUCTIONS**

- *This question paper consists of 10 questions divided into Part 'A' and Part 'B', each part containing 5 questions.*
- *Answers to questions of Part 'A' and Part 'B' are to be strictly attempted in separate answer sheet(s) and the main + supplementary answer sheet(s) used for each part must be tagged separately.*
- *Answers to questions of Part 'A' attempted in answer sheet(s) of Part 'B' or vice versa shall not be evaluated.*
- *Answer sheet(s) of Part 'A' and Part 'B' are not to be tagged together.*
- *Part 'A' and Part 'B' should be mentioned only on the covering page of the respective answer sheet(s).*
- *Attempt all questions in order.*
- *Each question carries 10 marks.*
- *Read the question carefully and answer to the point neatly and legibly.*
- *Do not leave any blank pages between two answers.*
- *Indicate the question number correctly for the answer in the margin space.*
- *Answer all the parts of a single question together.*
- *Start the answer to a question on a fresh page or leave adequate space between two answers.*
- *Draw table/diagrams/flowcharts wherever appropriate.*

**PART A**

1. Describe the corneal topography findings in keratoconus. 10  
How do you grade the severity of keratoconus?
2. What is Sturge-Weber syndrome? Give its classification, 2+(2+3+1+2)  
clinical signs, investigations and principles of management  
of associated glaucoma.
3. What are the ocular features of HIV disease? What is the 6+4  
impact of HAART on ocular features?
4. Classify antifungal drugs, their clinical uses and side-effects 3+4+3  
of each drug.
5. Describe the causes, investigations and management in a 3+3+4  
case of "tractional retinal detachment".

P.T.O.





FINAL EXAM  
DECEMBER 2014

OPHTHALMOLOGY

OPHTHALMOLOGY

PAPER - III

PAPER - III

**Please read carefully the important instructions mentioned on Page '1'**

Answers to questions of Part 'A' and Part 'B' are to be strictly attempted in separate answer sheet(s) and the main + supplementary answer sheet(s) used for each part must be tagged separately.

Answers to questions of Part 'A' attempted in answer sheet(s) of Part 'B' or vice versa shall not be evaluated.

**PART B**

- |  |             |
|--|-------------|
| 6. A 21 year old myope (-2.5D) presented with sudden profound unilateral diminution of vision. Discuss the differential diagnosis, investigation and management.   | 2+2+6       |
| 7. Describe the clinical features and management of lacrimal gland tumor.  | 5+5         |
| 8. Define and enumerate the iridocorneal endothelial Syndromes (ICE). Describe their salient features and management.  | 5+5         |
| 9. Discuss the role of Lasers in diabetic macular edema. Outline complete plan of management in severe diabetic macular edema. What is the role of newer Lasers in management of diabetic macular edema? | 5+2+3       |
| 10. Discuss the CATT trial. What were the objectives, design, conclusions and implications of the trial in respect of anti-VEGF agents?  | 2+(2+2+2+2) |

\*\*\*\*\*



FINAL EXAM  
DECEMBER 2014

## OPHTHALMOLOGY

### PAPER – IV

OPH/D/14/26/IV

Time : 3 hours

Max. Marks : 100

### IMPORTANT INSTRUCTIONS

- This question paper consists of 10 questions divided into Part 'A' and Part 'B', each part containing 5 questions.
- Answers to questions of Part 'A' and Part 'B' are to be strictly attempted in separate answer sheet(s) and the main + supplementary answer sheet(s) used for each part must be tagged separately.
- Answers to questions of Part 'A' attempted in answer sheet(s) of Part 'B' or vice versa shall not be evaluated.
- Answer sheet(s) of Part 'A' and Part 'B' are not to be tagged together.
- Part 'A' and Part 'B' should be mentioned only on the covering page of the respective answer sheet(s).
- Attempt all questions in order.
- Each question carries 10 marks.
- Read the question carefully and answer to the point neatly and legibly.
- Do not leave any blank pages between two answers.
- Indicate the question number correctly for the answer in the margin space.
- Answer all the parts of a single question together.
- Start the answer to a question on a fresh page or leave adequate space between two answers.
- Draw table/diagrams/flowcharts wherever appropriate.

### PART A

1. What is VEP? What are the types of VEP? What is the role of VEP in modern clinical practice? What are its limitations? 2+2+4+2
2. Discuss the principles of optical coherence tomography (OCT). What are the types of OCT? Mention indications of its use. 4+2+4
3. Anterior ischaemic optic neuropathy: types, clinical manifestations, investigations and management. 2+2+2+4
4. What is Donder's reduced eye? What are the cardinal points? 2+8
5. Classify and give complete management of esotropias in detail. 3+7

R.D.4  
MISSING

P.T.O.





**OPHTHALMOLOGY****PAPER – IV****Please read carefully the important instructions mentioned on Page '1'**

- *Answers to questions of Part 'A' and Part 'B' are to be strictly attempted in separate answer sheet(s) and the main + supplementary answer sheet(s) used for each part must be tagged separately.*
- *Answers to questions of Part 'A' attempted in answer sheet(s) of Part 'B' or vice versa shall not be evaluated.*

**PART B**

- |  |       |
|--|-------|
| 6. Describe the barriers to drug penetration in the cornea. What is partition coefficient? Describe various factors affecting drug penetration with respect to drug formulation and corneal anatomy. | 4+2+4 |
| 7. What are cytokines? Enumerate important pro-inflammatory cytokines. What role do they play in ocular inflammation?  | 2+3+5 |
| 8. What is the pharmacological mechanism of action of cyclosporine? What are its clinical uses in ophthalmology?   | 5+5   |
| 9. Describe clinical and therapeutic uses of prisms in ophthalmology.  | 10    |
| 10. Give various methods of grading of anterior chamber angle. Discuss principle of gonioscopy and various types of gonioscopes. What are the other modalities to see anterior chamber angle?        | 3+4+3 |

\*\*\*\*\*



**OPHTHALMOLOGY****PAPER – I**

OPH/J/14/26/I

Time : 3 hours  
Max. Marks : 100

**Important instructions:**

- Attempt all questions in order.
- Each question carries 10 marks.
- Read the question carefully and answer to the point neatly and legibly.
- Do not leave any blank pages between two answers.
- Indicate the question number correctly for the answer in the margin space.
- Answer all the parts of a single question together.
- Start the answer to a question on a fresh page or leave adequate space between two answers.
- Draw table/diagrams/flowcharts wherever appropriate.

**Write short notes on:**

1. a) How will you investigate a case of Nystagmus? 4+2+4  
b) What are the clinical conditions in which Nystagmus is seen?  
c) Management of Nystagmus.
2. a) What is the principle of Indirect Ophthalmoscopy (IDO)? 2+4+4  
b) What are the various lenses used for doing IDO and what are their advantages and disadvantages?  
c) Describe the lenses used for viewing the central retina on a slit lamp biomicroscope.
3. a) Orbital spaces and their applied importance 5+5  
b) Superior orbital fissure: Anatomy and associated clinical features
4. Describe anatomy and lesions of optic tracts, chiasma and optic radiations. 3+4+3
5. a) What are multifocal IOLs? 2+4+4  
b) What are their types and their advantages?  
c) What special surgical considerations will be utilized when implanting a multifocal IOL?
6. a) Describe in brief the embryological evolution of retina? 4+4+2  
b) What are the differences between rods and cones?  
c) What is the importance of IS/OS junctions?
7. a) Describe various pathways of glucose metabolism in the lens. 2+4+4  
b) What metabolic abnormalities cause diabetic and galactosaemic cataract?  
c) Describe briefly various congenital and developmental anomalies of lens.

P.T.O.





- 8. Enumerate causes of childhood blindness. How will you calculate sample size and plan survey for childhood blindness in India? 3+(3+4)
- 9. What are the objectives, strategies, approaches and organization of Vision 2020 programme? 2+4+2+2
- 10. a) Production, circulation and drainage of aqueous humour. 6+4  
 b) Describe components of blood ocular barrier and its clinical importance

\*\*\*\*\*





OPHTHALMOLOGY

PAPER – II

OPH/J/14/26/II

Time : 3 hours

Max. Marks : 100

Important instructions:

- Attempt all questions in order.
- Each question carries 10 marks.
- Read the question carefully and answer to the point neatly and legibly.
- Do not leave any blank pages between two answers.
- Indicate the question number correctly for the answer in the margin space.
- Answer all the parts of a single question together.
- Start the answer to a question on a fresh page or leave adequate space between two answers.
- Draw table/diagrams/flowcharts wherever appropriate.

1. Describe various concepts that explain the pathogenesis of glaucomatous ocular damage. 10
2. Classify congenital cranial dysinnervation disorders (CCDDs). Describe Duane's retraction syndrome and its management. 3+7
3. Describe different types of recurrent corneal erosions. Give an outline of their treatment. 3+7
4. Describe clinical features, pathology and treatment of vernal conjunctivitis. 3+3+4
5. a) What is Terson's Syndrome? 2+2+2+4  
b) What are its clinical features?  
c) Discuss its differential diagnosis.  
d) Describe the complications and their management.
6. Describe pathogenesis and pathological features of Papilloedema. 5+5
7. Classify chronic blepharitis. Describe its clinical features, etiology and treatment. 2+(2+2+4)
8. Describe the causes, types, investigation and management of a case of unilateral axial proptosis. 2+2+2+4
9. a) Describe various surgical difficulties encountered when doing a phacoemulsification in a small pupil. 5+5  
b) How do you manage a case of non-dilating pupil for phacoemulsification?
10. a) What are the various types of anti-VEGF agents available? 2+2+2+4  
b) What are their pharmacological features?  
c) What is their role in retinal disorders?  
d) What are their complications and limitations?





OPHTHALMOLOGY

PAPER – III

OPH/J/14/26/III

Time : 3 hours  
Max. Marks : 100

Important instructions:

- Attempt all questions in order.
- Each question carries 10 marks.
- Read the question carefully and answer to the point neatly and legibly.
- Do not leave any blank pages between two answers.
- Indicate the question number correctly for the answer in the margin space.
- Answer all the parts of a single question together.
- Start the answer to a question on a fresh page or leave adequate space between two answers.
- Draw table/diagrams/flowcharts wherever appropriate.

- |     |   |             |
|-----|---|-------------|
| 1.  | a) What are the commonly used Phakic IOLs?<br>b) What are their indications?<br>c) How does one calculate their power and size?   | 2+3+5       |
| 2.  | a) What is ultrasound biomicroscopy (UBM)? Discuss in brief the principles of UBM.<br>b) What are its advantages / disadvantages over anterior segment OCT?   | 6+4         |
| 3.  | Describe clinical features and principles of management of Blepharophimosis syndrome.   | 4+6         |
| 4.  | Describe the etiology, clinical features, differential diagnosis and management of congenital nasolacrimal duct obstruction.  | 2+2+2+4     |
| 5.  | A 76 year old individual underwent phacoemulsification for grade 4 cataract. He recovered incompletely and developed diminution of vision 6 weeks after surgery. Discuss the causes of diminished vision and their management in brief. | 6+4         |
| 6.  | Describe the indications, technique and complications of laser peripheral iridoplasty and laser peripheral iridotomy.   | 5+5         |
| 7.  | Describe the clinical features, investigations, indications and surgical management of infantile esotropia, and its post-operative complications.   | 1+2+2+3+2   |
| 8.  | Describe etiopathogenesis, clinical features and treatment of neovascular glaucoma.   | 4+3+3       |
| 9.  | Describe clinical features, treatment and prognosis in case of Cytomegalovirus Retinitis.   | 2+4+4       |
| 10. | What is conductive keratoplasty? What is the mechanism, indications, advantages and disadvantages of conductive keratoplasty?   | 2+(2+2+2+2) |

\*\*\*\*\*



**OPHTHALMOLOGY****PAPER – IV**

OPH/J/14/26/IV

Time : 3 hours

Max. Marks : 100

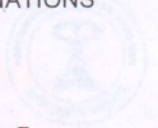
**Important instructions:**

- Attempt all questions in order.
- Each question carries 10 marks.
- Read the question carefully and answer to the point neatly and legibly.
- Do not leave any blank pages between two answers.
- Indicate the question number correctly for the answer in the margin space.
- Answer all the parts of a single question together.
- Start the answer to a question on a fresh page or leave adequate space between two answers.
- Draw table/diagrams/flowcharts wherever appropriate.

1. a) Enumerate the differential diagnosis of a pigmented iris lesion. 6+4  
b) Write a short note on histopathology of choroidal melanoma.
2. Classify corneal dystrophies. Describe the histopathological changes of stromal dystrophies and specific stains used in each. 4+6
3. Discuss the differential diagnosis of retinoblastoma. Discuss the factors which affect the genetic counseling for patients of retinoblastoma. 5+5
4. What is blade-free cataract surgery? What are its advantages over conventional phaco-emulsification? What are its disadvantages? 2+4+4
5. Describe technique, advantages and disadvantages of topical, retrobulbar block, peribulbar block and facial block anaesthesia for ocular surgery. 2+3+3+2
6. Discuss the differential diagnosis, investigations and management in a 22 year male with unilateral, profound and sudden diminution of vision. 4+2+4
7. a) Classify various ocular lubricating agents used in the management of dry eye disease. 4+2+4  
b) What is the role of preservatives used in them?  
c) What are the various types of preservatives used in lubricating agents?
8. a) Describe in brief various aberrations of the optical system of the eye. 5+5  
b) What are the various corrective mechanisms built in the eye to overcome these?

P.T.O.





9. Describe sympathetic nerve supply to the eye with the help of a diagram. Describe various pharmacological tests to diagnose the abnormalities of sympathetic system. 5+5
10. What are glaucoma drainage devices available? What is their mechanism of action? What are the complications following surgery? What is their role in glaucoma management as compared to conventional modulated trabeculectomy? 2+2+2+4

\*\*\*\*\*



**OPHTHALMOLOGY****PAPER – I**

OPH/D/15/26/I

Time : 3 hours  
Max. Marks : 100**IMPORTANT INSTRUCTIONS**

- *This question paper consists of 10 questions divided into Part 'A' and Part 'B', each part containing 5 questions.*
- *Answers to questions of Part 'A' and Part 'B' are to be strictly attempted in separate answer sheet(s) and the main + supplementary answer sheet(s) used for each part must be tagged separately.*
- *Answers to questions of Part 'A' attempted in answer sheet(s) of Part 'B' or vice versa shall not be evaluated.*
- *Answer sheet(s) of Part 'A' and Part 'B' are not to be tagged together.*
- *Part 'A' and Part 'B' should be mentioned only on the covering page of the respective answer sheet(s).*
- *Attempt all questions in order.*
- *Each question carries 10 marks.*
- *Read the question carefully and answer to the point neatly and legibly.*
- *Do not leave any blank pages between two answers.*
- *Indicate the question number correctly for the answer in the margin space.*
- *Answer all the parts of a single question together.*
- *Start the answer to a question on a fresh page or leave adequate space between two answers.*
- *Draw table/diagrams/flowcharts wherever appropriate.*

**PART A****Write short notes on:**

1. a) Principles of Snellen's visual acuity testing. 3+2+(2+3)  
b) What are the drawbacks of a Snellen's chart?  
c) Enumerate other charts for testing of visual acuity and give their advantages over the Snellen's chart.
2. What are dissociated vertical deviations (DVD)? How do you differentiate a DVD from an inferior oblique overaction? What is the management of DVDs? 2+4+4
3. a) Anatomy of the lacrimal sac with the help of diagram(s). 3+(2+2+3)  
b) What are different types of DCR surgeries and their advantages and disadvantages?
4. a) Anatomy of ciliary body with the help of diagram(s). 3+(4+3)  
b) Process of aqueous production and various factors that influence it.
5. Aetiology, inheritance, morphology and 4 main systemic metabolic associations of congenital cataract. 2+1+3+4

**P.T.O.**

**OPHTHALMOLOGY**

## PAPER – I

**Please read carefully the important instructions mentioned on Page '1'**

- *Answers to questions of Part 'A' and Part 'B' are to be strictly attempted in separate answer sheet(s) and the main + supplementary answer sheet(s) used for each part must be tagged separately.*
- *Answers to questions of Part 'A' attempted in answer sheet(s) of Part 'B' or vice versa shall not be evaluated.*

**PART B**

- Embryology of development of vitreous. 4+(2+4)
  - How does one diagnose and manage PHPV?
- Anatomy of Limbus and its surgical importance. (3+3)+(2+2)
  - Corneal wound healing and the role of Limbus.
- Define hypermetropia and its components. (1+3)+(3+3)
  - How it effects accommodation and ocular alignment?
- What are bias and confounding in statistical analysis? (2.5+2.5)
  - A sample of 100 patients was segregated into 2 groups to check the IOP lowering effect of 2 different anti-glaucoma medications. Give 5 possible causes of bias and 5 possible confounders. (2.5+2.5)
- Clinical and microbiological workup of corneal ulcer patient. (3+3)+(2+2)
  - Additional workup in suspected acanthamoeba and atypical mycobacterial keratitis.

\*\*\*\*\*

**OPHTHALMOLOGY****PAPER – II**

OPH/D/15/26/II

Time : 3 hours

Max. Marks : 100

**IMPORTANT INSTRUCTIONS**

- ***This question paper consists of 10 questions divided into Part 'A' and Part 'B', each part containing 5 questions.***
- ***Answers to questions of Part 'A' and Part 'B' are to be strictly attempted in separate answer sheet(s) and the main + supplementary answer sheet(s) used for each part must be tagged separately.***
- ***Answers to questions of Part 'A' attempted in answer sheet(s) of Part 'B' or vice versa shall not be evaluated.***
- ***Answer sheet(s) of Part 'A' and Part 'B' are not to be tagged together.***
- ***Part 'A' and Part 'B' should be mentioned only on the covering page of the respective answer sheet(s).***
- ***Attempt all questions in order.***
- ***Each question carries 10 marks.***
- ***Read the question carefully and answer to the point neatly and legibly.***
- ***Do not leave any blank pages between two answers.***
- ***Indicate the question number correctly for the answer in the margin space.***
- ***Answer all the parts of a single question together.***
- ***Start the answer to a question on a fresh page or leave adequate space between two answers.***
- ***Draw table/diagrams/flowcharts wherever appropriate.***

**PART A****Write short notes on:**

1. a) Pathology of choroidal melanoma. 5+5  
b) What are its adverse prognostic factors?
2. What are the various vascular retinal tumors? Briefly discuss presentation, diagnosis and management of any 2 of them. 2+(4+4)
3. A 25 year old woman presents with inability to correct her vision completely with glasses. Her keratometric values are 48D@ 95°/52D@185°(OD), 50D@65°/55D@ 155°. What is your plausible diagnosis and discuss important steps in further confirming your diagnosis and factors influencing her management? 2+3+5
4. What are the ocular manifestations of Herpes Zoster Ophthalmicus in acute and chronic state? How do you manage them? What is the management of post-herpetic neuralgia? (2+2)+3+3
5. a) Ocular manifestations of dengue fever. 5+5  
b) How will you monitor and manage a case of dengue fever from ophthalmic standpoint?

**P.T.O.**



**OPHTHALMOLOGY****PAPER – II****Please read carefully the important instructions mentioned on Page '1'**

- *Answers to questions of Part 'A' and Part 'B' are to be strictly attempted in separate answer sheet(s) and the main + supplementary answer sheet(s) used for each part must be tagged separately.*
- *Answers to questions of Part 'A' attempted in answer sheet(s) of Part 'B' or vice versa shall not be evaluated.*

**PART B**

- |    |  |         |
|----|--|---------|
| 1. | Presentation, pathogenesis and management of Mooren's ulcer.   | 3+3+4   |
| 2. | Clinical presentation, diagnosis, histopathology and management of two most common premalignant epibulbar ocular tumours.  | 5x2     |
| 3. | Describe the approach to a 73 year old male patient who complains of a profound unilateral loss of vision in one eye, followed by a similar loss on the other after 8 weeks. What is the diagnosis, clinical features, investigations and management of such a case? | 2+3+2+3 |
| 4. | How will you diagnose and classify a case of inflammatory glaucoma? What are the treatment options available?  | (3+2)+5 |
| 5. | Management of macular edema following retinal vein occlusion.  | 10      |

\*\*\*\*\*

**OPHTHALMOLOGY****PAPER – III**

OPH/D/15/26/III

Time : 3 hours  
Max. Marks : 100**IMPORTANT INSTRUCTIONS**

- *This question paper consists of 10 questions divided into Part 'A' and Part 'B', each part containing 5 questions.*
- *Answers to questions of Part 'A' and Part 'B' are to be strictly attempted in separate answer sheet(s) and the main + supplementary answer sheet(s) used for each part must be tagged separately.*
- *Answers to questions of Part 'A' attempted in answer sheet(s) of Part 'B' or vice versa shall not be evaluated.*
- *Answer sheet(s) of Part 'A' and Part 'B' are not to be tagged together.*
- *Part 'A' and Part 'B' should be mentioned only on the covering page of the respective answer sheet(s).*
- *Attempt all questions in order.*
- *Each question carries 10 marks.*
- *Read the question carefully and answer to the point neatly and legibly.*
- *Do not leave any blank pages between two answers.*
- *Indicate the question number correctly for the answer in the margin space.*
- *Answer all the parts of a single question together.*
- *Start the answer to a question on a fresh page or leave adequate space between two answers.*
- *Draw table/diagrams/flowcharts wherever appropriate.*

**PART A****Write short notes on:**

- |  |       |
|--|-------|
| 1. Give various perimetric criteria for the diagnosis of early glaucoma.   | 10    |
| 2. a) What are the surgical spaces of the orbit?   | 2     |
| b) What are the surgical approaches?   | 3     |
| c) Role of MRI & CT in diagnosis of ocular lesions.  | 5     |
| 3. Differential diagnosis and management of a 47year old female patient presenting with unilateral hazy vitreous.                  | 5+5   |
| 4. Recent advances in diagnosis, pathogenesis and management of central serous retinopathy.  | 2+4+4 |
| 5. A 34 year old pregnant lady presents with sudden bilateral loss of vision. What are the likely causes? How will you treat them? | 5+5   |

**P.T.O.**



**OPHTHALMOLOGY****PAPER – III****Please read carefully the important instructions mentioned on Page '1'**

- *Answers to questions of Part 'A' and Part 'B' are to be strictly attempted in separate answer sheet(s) and the main + supplementary answer sheet(s) used for each part must be tagged separately.*
- *Answers to questions of Part 'A' attempted in answer sheet(s) of Part 'B' or vice versa shall not be evaluated.*

**PART B**

- |   |               |
|---|---------------|
| 1. Management of a basal cell carcinoma 5mm in diameter, located in the centre of lower lid margin.   | 10            |
| 2. How will you diagnose and manage a case of intra operative zonular dialysis during cataract surgery?   | 3+7           |
| 3. a) Causes of bilateral childhood proptosis.<br>b) How would you investigate such a case?   | 5+5           |
| 4. What are the principles of scleral buckling surgery for retinal detachment? What are its modern day indications and problems?                                      | 4+(3+3)       |
| 5. What are the indications and modes of application of periocular steroids? What are their advantages and complications and what steps can be taken to prevent them. | (2+2)+(2+2+2) |

\*\*\*\*\*

**OPHTHALMOLOGY****PAPER – IV**

OPH/D/15/26/IV

Time : 3 hours  
Max. Marks : 100**IMPORTANT INSTRUCTIONS**

- *This question paper consists of 10 questions divided into Part 'A' and Part 'B', each part containing 5 questions.*
- *Answers to questions of Part 'A' and Part 'B' are to be strictly attempted in separate answer sheet(s) and the main + supplementary answer sheet(s) used for each part must be tagged separately.*
- *Answers to questions of Part 'A' attempted in answer sheet(s) of Part 'B' or vice versa shall not be evaluated.*
- *Answer sheet(s) of Part 'A' and Part 'B' are not to be tagged together.*
- *Part 'A' and Part 'B' should be mentioned only on the covering page of the respective answer sheet(s).*
- *Attempt all questions in order.*
- *Each question carries 10 marks.*
- *Read the question carefully and answer to the point neatly and legibly.*
- *Do not leave any blank pages between two answers.*
- *Indicate the question number correctly for the answer in the margin space.*
- *Answer all the parts of a single question together.*
- *Start the answer to a question on a fresh page or leave adequate space between two answers.*
- *Draw table/diagrams/flowcharts wherever appropriate.*

**PART A****Write short notes on:**

1. What are the objectives and action plan of "National Programme for Control of Blindness" (NPCB)? Give the definition of blindness as per NPCB and WHO. (4+4)+(1+1)
2. What is micropulsed retinal laser? What is the change in concept of application of lasers in a micropulsed design and what are its advantages? 3+(3+4)
3. What are the recent advances in choroidal assessment on OCT? In which situations has it been applied? 7+3
4. A 30 year old male presented with genital lesions and complained of sudden diminution of vision in one eye followed 6 weeks later by similar diminution in the other eye. What are the possible diagnoses? Give broad guidelines in the management of each situation. 2+8
5. Enumerate the uses of optical coherence principle in Ophthalmology. What equipments are based on this principle and their advantages? 5+5

**P.T.O.**



**OPHTHALMOLOGY****PAPER – IV****Please read carefully the important instructions mentioned on Page '1'**

- *Answers to questions of Part 'A' and Part 'B' are to be strictly attempted in separate answer sheet(s) and the main + supplementary answer sheet(s) used for each part must be tagged separately.*
- *Answers to questions of Part 'A' attempted in answer sheet(s) of Part 'B' or vice versa shall not be evaluated.*

**PART B**

- |  |           |
|--|-----------|
| 1. a) Genesis of visual evoked potential (VEP).  | 3+(2+2+3) |
| b) What are the types of VEP and enumerate the conditions for assisting in diagnosis and management of the conditions?           |           |
| 2. Principles, indications and complications of Botulinum toxin chemo denervation.   | 2+4+4     |
| 3. What are the components of Blepharophimosis syndrome? Outline various principles in the complete management of this syndrome. | 3+7       |
| 4. (a) Diagnostic criteria for Neurofibromatosis.  | 3+(4+3)   |
| (b) Ocular features of Neurofibromatosis Type 1 & 2.   |           |
| 5. Principles, technique, indications, and complications of photodynamic therapy.  | 2+3+3+2   |

\*\*\*\*\*

**OPHTHALMOLOGY****PAPER – I**

OPH/J/15/26/I

Time : 3 hours  
Max. Marks : 100**IMPORTANT INSTRUCTIONS**

- *This question paper consists of 10 questions divided into Part 'A' and Part 'B', each part containing 5 questions.*
- *Answers to questions of Part 'A' and Part 'B' are to be strictly attempted in separate answer sheet(s) and the main + supplementary answer sheet(s) used for each part must be tagged separately.*
- *Answers to questions of Part 'A' attempted in answer sheet(s) of Part 'B' or vice versa shall not be evaluated.*
- *Answer sheet(s) of Part 'A' and Part 'B' are not to be tagged together.*
- *Part 'A' and Part 'B' should be mentioned only on the covering page of the respective answer sheet(s).*
- *Attempt all questions in order.*
- *Each question carries 10 marks.*
- *Read the question carefully and answer to the point neatly and legibly.*
- *Do not leave any blank pages between two answers.*
- *Indicate the question number correctly for the answer in the margin space.*
- *Answer all the parts of a single question together.*
- *Start the answer to a question on a fresh page or leave adequate space between two answers.*
- *Draw table/diagrams/flowcharts wherever appropriate.*

**PART A**

Write short notes on:

- |   |           |
|---|-----------|
| 1. Principles, composition, clinical applications and advantages of an ETDRS visual acuity chart.   | 2+2+3+3   |
| 2. Causes, clinical features, special investigations and management in a case of Sjogren's syndrome.  | 2+2+3+3   |
| 3. Principles, technique, advantages and possible sources of error in performing Goldmann's applanation tonometry.                                      | 2+2+3+3   |
| 4. a) Anatomy and development of the macula.<br>b) Different zones of macula and their clinical importance.<br>c) Enumerate the macular function tests. | 4+(2+2)+2 |
| 5. a) Signs of optic nerve dysfunction.<br>b) Various investigations available to assess the optic nerve function.                                      | 4+6       |

**P.T.O.**

**OPHTHALMOLOGY**

## PAPER – I

**Please read carefully the important instructions mentioned on Page '1'**

- *Answers to questions of Part 'A' and Part 'B' are to be strictly attempted in separate answer sheet(s) and the main + supplementary answer sheet(s) used for each part must be tagged separately.*
- *Answers to questions of Part 'A' attempted in answer sheet(s) of Part 'B' or vice versa shall not be evaluated.*

**PART B**

Write short notes on:

- |     |  |         |
|-----|--|---------|
| 6.  | a) Difference between a Horopter and Panum's area.   | 4+(3+3) |
|     | b) Sensory and motor adaptations to strabismus.  |         |
| 7.  | a) Clinical features and causative organisms of a case of bacterial corneal ulcer.   | (3+2)+5 |
|     | b) How will you investigate such a case?   |         |
| 8.  | Causes, clinical features and management of ectopia lentis.  | 3+2+5   |
| 9.  | Pathology, differential diagnosis, adverse prognostic factors and non-surgical management of a case of choroidal melanoma. | 2+2+2+4 |
| 10. | a) Measures of central tendency in a series of observations.   | 5+5     |
|     | b) Measures of variability of individual observations.   |         |

\*\*\*\*\*



**OPHTHALMOLOGY****PAPER – II**

OPH/J/15/26/II

Time : 3 hours  
Max. Marks : 100**IMPORTANT INSTRUCTIONS**

- *This question paper consists of 10 questions divided into Part 'A' and Part 'B', each part containing 5 questions.*
- *Answers to questions of Part 'A' and Part 'B' are to be strictly attempted in separate answer sheet(s) and the main + supplementary answer sheet(s) used for each part must be tagged separately.*
- *Answers to questions of Part 'A' attempted in answer sheet(s) of Part 'B' or vice versa shall not be evaluated.*
- *Answer sheet(s) of Part 'A' and Part 'B' are not to be tagged together.*
- *Part 'A' and Part 'B' should be mentioned only on the covering page of the respective answer sheet(s).*
- *Attempt all questions in order.*
- *Each question carries 10 marks.*
- *Read the question carefully and answer to the point neatly and legibly.*
- *Do not leave any blank pages between two answers.*
- *Indicate the question number correctly for the answer in the margin space.*
- *Answer all the parts of a single question together.*
- *Start the answer to a question on a fresh page or leave adequate space between two answers.*
- *Draw table/diagrams/flowcharts wherever appropriate.*

**PART A**

Write short notes on:

- |   |         |
|---|---------|
| 1. Pathogenesis, diagnosis, differential diagnosis and management of chronic blepharitis.   | 2+2+2+4 |
| 2. Acquired causes and management of an anophthalmic socket.  | 4+6     |
| 3. Clinical features, pathogenesis, differential diagnosis and management of a case of viral conjunctivitis.  | 2+2+2+4 |
| 4. a) Clinical features and types of anterior and posterior scleritis.<br>b) How will you investigate a case of scleritis?<br>c) Management of necrotising scleritis. | 4+4+2   |
| 5. a) Enumerate causes of unilateral profound painless loss of vision.<br>b) How will you manage such a case in a 65 year old male patient?                           | 3+7     |

**P.T.O.**

**OPHTHALMOLOGY****PAPER – II****Please read carefully the important instructions mentioned on Page '1'**

- *Answers to questions of Part 'A' and Part 'B' are to be strictly attempted in separate answer sheet(s) and the main + supplementary answer sheet(s) used for each part must be tagged separately.*
- *Answers to questions of Part 'A' attempted in answer sheet(s) of Part 'B' or vice versa shall not be evaluated.*

**PART B**

Write short notes on:

- |  |         |
|--|---------|
| 6. Differential diagnosis and management of a 10 year old boy presenting with bilateral diminution of vision and swelling of the right knee.   | 5+5     |
| 7. a) Investigations and assessment of a case of long standing diabetes with moderate non proliferative diabetic retinopathy with clinically significant macular edema.<br>b) How will you manage such a case? | 4+6     |
| 8. Investigations, diagnosis and management of a 40 year old male patient presenting with unilateral central scotoma.  | 3+3+4   |
| 9. Pathogenesis, causes, presentation and management of neovascular glaucoma.  | 2+2+3+3 |
| 10. a) Define and classify esotropia.<br>b) Management of a 6 year old patient with esotropia.   | (2+2)+6 |

\*\*\*\*\*

**OPHTHALMOLOGY****PAPER – III**

OPH/J/15/26/III

Time : 3 hours  
Max. Marks : 100**IMPORTANT INSTRUCTIONS**

- *This question paper consists of 10 questions divided into Part 'A' and Part 'B', each part containing 5 questions.*
- *Answers to questions of Part 'A' and Part 'B' are to be strictly attempted in separate answer sheet(s) and the main + supplementary answer sheet(s) used for each part must be tagged separately.*
- *Answers to questions of Part 'A' attempted in answer sheet(s) of Part 'B' or vice versa shall not be evaluated.*
- *Answer sheet(s) of Part 'A' and Part 'B' are not to be tagged together.*
- *Part 'A' and Part 'B' should be mentioned only on the covering page of the respective answer sheet(s).*
- *Attempt all questions in order.*
- *Each question carries 10 marks.*
- *Read the question carefully and answer to the point neatly and legibly.*
- *Do not leave any blank pages between two answers.*
- *Indicate the question number correctly for the answer in the margin space.*
- *Answer all the parts of a single question together.*
- *Start the answer to a question on a fresh page or leave adequate space between two answers.*
- *Draw table/diagrams/flowcharts wherever appropriate.*

**PART A**

Write short notes on:

1. a) Clinical presentation of a case of orbital blowout fracture. 3+2+5  
b) How will you investigate such a case?  
c) Indications for surgery and the surgical principles.
2. Causes and management of a case of acquired ptosis. 5+5
3. Indications, advantages, disadvantages and long term results of Descemet's stripping endothelial keratoplasty. 2+3+3+2
4. a) Define ocular hypertension. 2+(4+4)  
b) Investigation and management of a case of ocular hypertension.
5. Types, indications, advantages and complications of glaucoma drainage devices. 2+2+3+3

**P.T.O.**



**OPHTHALMOLOGY****PAPER – III****Please read carefully the important instructions mentioned on Page ‘1’**

- *Answers to questions of Part ‘A’ and Part ‘B’ are to be strictly attempted in separate answer sheet(s) and the main + supplementary answer sheet(s) used for each part must be tagged separately.*
- *Answers to questions of Part ‘A’ attempted in answer sheet(s) of Part ‘B’ or vice versa shall not be evaluated.*

**PART B**

Write short notes on:

- |     |   |             |
|-----|---|-------------|
| 6.  | a) Indications, routes of administration, dosage schedule and complication of steroids in uveitis.              | (2+2+2+2)+2 |
|     | b) Role of alternative drugs used in uveitis.   |             |
| 7.  | Presentation, systemic features, investigations and treatment of primary intraocular lymphoma.                  | 2+2+3+3     |
| 8.  | Clinical features, differential diagnosis and management of a case of Coat’s disease.                           | 2+4+4       |
| 9.  | Indications, advantages and disadvantages of internal limiting membrane (ILM) peeling in vitreoretinal surgery. | 2+4+4       |
| 10. | a) What is Duane’s Retraction Syndrome?   | 1+(2+3)+4   |
|     | b) Enumerate the types and describe the clinical features.  |             |
|     | c) Management of a case of Duane’s Retraction Syndrome with abnormal head posture.                              |             |

\*\*\*\*\*

**OPHTHALMOLOGY****PAPER – IV**

OPH/J/15/26/IV

Time : 3 hours  
Max. Marks : 100**IMPORTANT INSTRUCTIONS**

- *This question paper consists of 10 questions divided into Part 'A' and Part 'B', each part containing 5 questions.*
- *Answers to questions of Part 'A' and Part 'B' are to be strictly attempted in separate answer sheet(s) and the main + supplementary answer sheet(s) used for each part must be tagged separately.*
- *Answers to questions of Part 'A' attempted in answer sheet(s) of Part 'B' or vice versa shall not be evaluated.*
- *Answer sheet(s) of Part 'A' and Part 'B' are not to be tagged together.*
- *Part 'A' and Part 'B' should be mentioned only on the covering page of the respective answer sheet(s).*
- *Attempt all questions in order.*
- *Each question carries 10 marks.*
- *Read the question carefully and answer to the point neatly and legibly.*
- *Do not leave any blank pages between two answers.*
- *Indicate the question number correctly for the answer in the margin space.*
- *Answer all the parts of a single question together.*
- *Start the answer to a question on a fresh page or leave adequate space between two answers.*
- *Draw table/diagrams/flowcharts wherever appropriate.*

**PART A**

Write short notes on:

1. a) Principles, role and uses of ERG. (2+3+3)+2  
b) Multifocal ERG and its importance.
2. a) Posterior segment complications in a case of blunt trauma to the eye. 5+5  
b) How will you manage them?
3. a) What are the main types of migraine? 3+7  
b) Differential diagnoses of the visual phenomena that accompany an attack of migraine.
4. a) What is an epiretinal membrane (ERM)? 2+(4+4)  
b) Causes of ERM and their management.
5. a) What is a dermoid cyst? 2+4+4  
b) Systemic associations of dermoid cyst.  
c) Differential diagnosis of epibulbar swellings.

**P.T.O.**

**OPHTHALMOLOGY****PAPER – IV****Please read carefully the important instructions mentioned on Page '1'**

- *Answers to questions of Part 'A' and Part 'B' are to be strictly attempted in separate answer sheet(s) and the main + supplementary answer sheet(s) used for each part must be tagged separately.*
- *Answers to questions of Part 'A' attempted in answer sheet(s) of Part 'B' or vice versa shall not be evaluated.*

**PART B**

Write short notes on:

- |     |  |         |
|-----|--|---------|
| 6.  | a) Differential diagnosis of heterochromia iridis.<br>b) Features, complications and management of a case of Fuch's Uveitis Syndrome.  | 2+8     |
| 7.  | Diagnosis and management of a case of shallow anterior chamber on the first postoperative day following trabeculectomy.  | 5+5     |
| 8.  | Indications, advantages, disadvantages and complications of a Toric multifocal intra ocular lens implantation following cataract extraction.   | 2+3+3+2 |
| 9.  | a) What is pseudophakic bullous keratopathy?<br>b) Etiopathogenesis, clinical features and management of pseudophakic bullous keratopathy.   | 1+3+2+4 |
| 10. | a) Enumerate the various short term and intermediate term methods for corneal preservation.<br>b) What are their main constituents?<br>c) Advantages and disadvantages of these media. | 4+3+3   |

\*\*\*\*\*



**OPHTHALMOLOGY****PAPER – I**

OPH/APRIL/16/26/I

Time : 3 hours

Max. Marks : 100

**Important instructions:**

- *Attempt all questions in order.*
- *Each question carries 10 marks.*
- *Read the question carefully and answer to the point neatly and legibly.*
- *Do not leave any blank pages between two answers.*
- *Indicate the question number correctly for the answer in the margin space.*
- *Answer all the parts of a single question together.*
- *Start the answer to a question on a fresh page or leave adequate space between two answers.*
- *Draw table/diagrams/flowcharts wherever appropriate.*

Write short notes on:

- |   |       |
|---|-------|
| 1. Define Myopia. What are the complications of pathological myopia? Enlist the methods of correction of simple myopia including their advantages and disadvantages.        | 1+3+6 |
| 2. a) Lacrimal pump mechanism.<br>b) Clinical evaluation and investigations of epiphora.  | 5+5   |
| 3. Laboratory diagnosis of uveitis.   | 10    |
| 4. Antibiotics used in Ophthalmology and routes of administration.  | 10    |
| 5. Anatomy and embryology of crystalline lens. Write a note on its applied aspects.   | 6+4   |
| 6. Anatomy and embryology of the angle of the anterior chamber with diagram. Classify mechanism of primary angle closure with help of diagrams.                             | 5+5   |
| 7. Clinical and impression cytology features of ocular surface disorders.   | 10    |
| 8. Pharmacokinetics of topical anti glaucoma drugs.   | 10    |
| 9. a) Physiology of accommodation with diagrams.<br>b) What are the methods of correcting presbyopia?   | 5+5   |
| 10. Define Low Vision. How would you examine a preschool child presenting with low vision? What are the modalities of visual rehabilitation and schooling for such a child? | 1+5+4 |

\*\*\*\*\*

**OPHTHALMOLOGY**

## PAPER – II

OPH/APRIL/16/26/II

Time : 3 hours

Max. Marks : 100

**Important instructions:**

- *Attempt all questions in order.*
- *Each question carries 10 marks.*
- *Read the question carefully and answer to the point neatly and legibly.*
- *Do not leave any blank pages between two answers.*
- *Indicate the question number correctly for the answer in the margin space.*
- *Answer all the parts of a single question together.*
- *Start the answer to a question on a fresh page or leave adequate space between two answers.*
- *Draw table/diagrams/flowcharts wherever appropriate.*

Write short notes on:

- |   |         |
|---|---------|
| 1. Etiopathogenesis, symptoms, signs and management of central retinal artery occlusion.  | 3+2+3+2 |
| 2. Classification and management of chemical ocular injuries.   | 3+7     |
| 3. Clinical features and management of varicella zoster related ocular affections.  | 4+6     |
| 4. a) Enumerate the vitreous substitutes.<br>b) Their properties and uses.  | 2+8     |
| 5. Pathology, clinical features and management of malignant melanoma of choroid.  | 2+4+4   |
| 6. Causes, investigations and management of hyphema.  | 3+3+4   |
| 7. Different lasers used in treatment of various subtypes of glaucoma.  | 10      |
| 8. Methodology of corneal harvesting and methods of preservation.   | 10      |
| 9. a) Etiology and management of developmental cataract.<br>b) How would age of presentation determine its treatment and prognosis? | (2+4)+4 |
| 10. Pathogenesis, clinical features and management of central serous chorioretinopathy.   | 2+4+4   |

\*\*\*\*\*

**OPHTHALMOLOGY**

## PAPER – III

OPH/APRIL/16/26/III

Time : 3 hours

Max. Marks : 100

**Important instructions:**

- *Attempt all questions in order.*
- *Each question carries 10 marks.*
- *Read the question carefully and answer to the point neatly and legibly.*
- *Do not leave any blank pages between two answers.*
- *Indicate the question number correctly for the answer in the margin space.*
- *Answer all the parts of a single question together.*
- *Start the answer to a question on a fresh page or leave adequate space between two answers.*
- *Draw table/diagrams/flowcharts wherever appropriate.*

Write short notes on:

- |   |           |
|---|-----------|
| 1. What is safe application of antimetabolites in trabeculectomy?<br>Describe refinements in trabeculectomy which minimize hypotony and overfiltration of bleb. | 3+7       |
| 2. Causes and management of tractional retinal detachment.  | 10        |
| 3. Enumerate and describe MIGS (Microinvasive Glaucoma Surgery) procedures. List its advantages and disadvantages in eyes with Asian ethnicity.                 | 5+5       |
| 4. Elaborate on procedure of DALK. What are the complications of this procedure?  | 6+4       |
| 5. a) Management of cytomegalovirus retinitis.<br>b) Enlist the other retinal manifestations of HIV infections.   | 6+4       |
| 6. Localisation and management of intraocular foreign bodies.   | 4+6       |
| 7. Management of congenital nasolacrimal duct obstruction in a two year old child. How would the management differ in a 10 year old?                            | 6+4       |
| 8. Etiology, clinical features and treatment of cystoid macular edema.  | 3+4+3     |
| 9. Causes, mechanism and rationale of corneal vascularisation. Add a note on high risk keratoplasty.  | (3+2+2)+3 |
| 10. Enumerate indications and types of limbal stem cell transplantation. Discuss in detail the procedure.   | (3+2)+5   |

\*\*\*\*\*



**OPHTHALMOLOGY**

## PAPER – IV

OPH/APRIL/16/26/IV

Time : 3 hours

Max. Marks : 100

**Important instructions:**

- *Attempt all questions in order.*
- *Each question carries 10 marks.*
- *Read the question carefully and answer to the point neatly and legibly.*
- *Do not leave any blank pages between two answers.*
- *Indicate the question number correctly for the answer in the margin space.*
- *Answer all the parts of a single question together.*
- *Start the answer to a question on a fresh page or leave adequate space between two answers.*
- *Draw table/diagrams/flowcharts wherever appropriate.*

Write short notes on:

1. Outline the goals of Advanced Glaucoma Intervention Study (AGIS) and briefly discuss its findings. 10
2. Discuss the CATT study and write a note on VEGF – trap. 10
3. a) Clinical assessment of entropion. 5+5  
b) Surgical options in involutinal entropion.
4. Advances in the management of keratoconus. 10
5. What is pneumoretinopexy? What are its indications, contraindications and complications? 3+(3+2+2)
6. a) Mechanism of action, technique and complications of selective laser trabeculoplasty. (2+3+3)+2  
b) What are its advantages over Argon Laser trabeculoplasty?
7. Newer imaging techniques in open angle glaucoma. 10
8. Classification, guidelines on follow up and management of stage IV + V ROP. 10
9. Management of post operative endophthalmitis. 10
10. a) Classify Age Related Macular Degeneration (ARMD). 5+5  
b) Clinical features and management of Dry ARMD.

\*\*\*\*\*

**OPHTHALMOLOGY****PAPER – I**

OPH/D/16/26/I

Time : 3 hours  
Max. Marks : 100**IMPORTANT INSTRUCTIONS**

- *This question paper consists of 10 questions divided into Part 'A' and Part 'B', each part containing 5 questions.*
- *Answers to questions of Part 'A' and Part 'B' are to be strictly attempted in separate answer sheet(s) and the main + supplementary answer sheet(s) used for each part must be tagged separately.*
- *Answers to questions of Part 'A' attempted in answer sheet(s) of Part 'B' or vice versa shall not be evaluated.*
- *Answer sheet(s) of Part 'A' and Part 'B' are not to be tagged together.*
- *Part 'A' and Part 'B' should be mentioned only on the covering page of the respective answer sheet(s).*
- *Attempt all questions in order.*
- *Each question carries 10 marks.*
- *Read the question carefully and answer to the point neatly and legibly.*
- *Do not leave any blank pages between two answers.*
- *Indicate the question number correctly for the answer in the margin space.*
- *Answer all the parts of a single question together.*
- *Start the answer to a question on a fresh page or leave adequate space between two answers.*
- *Draw table/diagrams/flowcharts wherever appropriate.*

Write short notes on:

**PART A**

1. a) Limbal anatomy. 5+5  
b) Relationship between limbus and corneal epithelial repair.
2. a) What are spherical aberrations? 4+(4+2)  
b) What is negative and positive asphericity of cornea?  
Give one example of each.
3. a) Anatomy and development of eyelids. (4+4)+2  
b) Enumerate four congenital anomalies of eyelids.
4. a) Development of vitreous. 3+2+(3+2)  
b) What is persistent hyperplastic primary vitreous?  
c) Diagnostic features and differential diagnosis of persistent hyperplastic primary vitreous.
5. a) Enumerate two broad headings for study designs and give one example under each category. 2+(2+2+2+2)  
b) Define specificity and sensitivity in evaluating screening tests. What is their relevance to positive and negative predictive value of the test?

**P.T.O.**

**OPHTHALMOLOGY**

## PAPER – I

**Please read carefully the important instructions mentioned on Page '1'**

- *Answers to questions of Part 'A' and Part 'B' are to be strictly attempted in separate answer sheet(s) and the main + supplementary answer sheet(s) used for each part must be tagged separately.*
- *Answers to questions of Part 'A' attempted in answer sheet(s) of Part 'B' or vice versa shall not be evaluated.*

**PART B**

- |     |  |           |
|-----|--|-----------|
| 6.  | a) What is amplitude of accommodation?   | 3+(3+2)+2 |
|     | b) What is spasm of accommodation? Name two conditions in which this is commonly seen.       |           |
|     | c) How do you treat this condition?  |           |
| 7.  | a) What are the different designs of bifocal spectacle lens?                                 | 3+4+3     |
|     | b) Give 2 advantages and disadvantages of each type.   |           |
|     | c) What is the best design to minimize these pitfalls?                                       |           |
| 8.  | a) Production and outflow of aqueous humor.  | 3+4+3     |
|     | b) Relationship between central corneal thickness and IOP measurement.                       |           |
|     | c) The accepted norm for the adjustment of corneal thickness variations to IOP measurement.  |           |
| 9.  | Blood supply of choroid, ciliary body and iris.  | 3+3+4     |
| 10. | a) Pathway of fourth cranial nerve.  | 5+5       |
|     | b) Enumerate the causes of fourth nerve palsy (acquired) with respect to site of affections. |           |

\*\*\*\*\*



**OPHTHALMOLOGY****PAPER – II**

OPH/D/16/26/II

Time : 3 hours

Max. Marks : 100

**IMPORTANT INSTRUCTIONS**

- *This question paper consists of 10 questions divided into Part 'A' and Part 'B', each part containing 5 questions.*
- *Answers to questions of Part 'A' and Part 'B' are to be strictly attempted in separate answer sheet(s) and the main + supplementary answer sheet(s) used for each part must be tagged separately.*
- *Answers to questions of Part 'A' attempted in answer sheet(s) of Part 'B' or vice versa shall not be evaluated.*
- *Answer sheet(s) of Part 'A' and Part 'B' are not to be tagged together.*
- *Part 'A' and Part 'B' should be mentioned only on the covering page of the respective answer sheet(s).*
- *Attempt all questions in order.*
- *Each question carries 10 marks.*
- *Read the question carefully and answer to the point neatly and legibly.*
- *Do not leave any blank pages between two answers.*
- *Indicate the question number correctly for the answer in the margin space.*
- *Answer all the parts of a single question together.*
- *Start the answer to a question on a fresh page or leave adequate space between two answers.*
- *Draw table/diagrams/flowcharts wherever appropriate.*

Write short notes on:

**PART A**

- |   |         |
|---|---------|
| 1. What are the causes of dry eye post LASIK surgery? How will you manage it?   | 5+5     |
| 2. Principles in the management of cataract surgery post vitreo-retinal surgery with silicone oil in vitreous.                | 10      |
| 3. Symptoms, signs, differential diagnosis and management of lacrimal gland swellings.  | 2+2+3+3 |
| 4. Clinical features, histopathology and management of ocular surface squamous neoplasia (OSSN).                              | 3+4+3   |
| 5. Clinical features and management of corneal epithelial infectious ulcers and immune keratitis in Herpes Simplex infection. | 5+5     |

**P.T.O.**

**OPHTHALMOLOGY****PAPER – II****Please read carefully the important instructions mentioned on Page '1'**

- *Answers to questions of Part 'A' and Part 'B' are to be strictly attempted in separate answer sheet(s) and the main + supplementary answer sheet(s) used for each part must be tagged separately.*
- *Answers to questions of Part 'A' attempted in answer sheet(s) of Part 'B' or vice versa shall not be evaluated.*

**PART B**

- |   |         |
|---|---------|
| 6. Classification and diagnosis of choroidal effusions.   | 5+5     |
| 7. Evaluation and management of near total hyphemia in a 10 year old boy post injury with a ball presenting to you on the 2 <sup>nd</sup> day.        | 5+5     |
| 8. Classification and management of various subtypes of entropion.  | 5+5     |
| 9. a) What are the various Anti VEGF intra-vitreous agents being used?<br>b) What are the indications for their use and highlight their side effects? | 3+(3+4) |
| 10. Blow out fracture of orbit – Clinical features, investigations and management.  | 3+3+4   |

\*\*\*\*\*

**OPHTHALMOLOGY****PAPER – III**

OPH/D/16/26/III

Time : 3 hours  
Max. Marks : 100**IMPORTANT INSTRUCTIONS**

- *This question paper consists of 10 questions divided into Part 'A' and Part 'B', each part containing 5 questions.*
- *Answers to questions of Part 'A' and Part 'B' are to be strictly attempted in separate answer sheet(s) and the main + supplementary answer sheet(s) used for each part must be tagged separately.*
- *Answers to questions of Part 'A' attempted in answer sheet(s) of Part 'B' or vice versa shall not be evaluated.*
- *Answer sheet(s) of Part 'A' and Part 'B' are not to be tagged together.*
- *Part 'A' and Part 'B' should be mentioned only on the covering page of the respective answer sheet(s).*
- *Attempt all questions in order.*
- *Each question carries 10 marks.*
- *Read the question carefully and answer to the point neatly and legibly.*
- *Do not leave any blank pages between two answers.*
- *Indicate the question number correctly for the answer in the margin space.*
- *Answer all the parts of a single question together.*
- *Start the answer to a question on a fresh page or leave adequate space between two answers.*
- *Draw table/diagrams/flowcharts wherever appropriate.*

Write short notes on:

**PART A**

- |   |       |
|---|-------|
| 1. Current status and indications of anterior and posterior lamellar corneal surgeries.   | 5+5   |
| 2. Clinical features, diagnosis and management of intra-ocular cysticercosis.   | 3+3+4 |
| 3. Management of dislocated nuclear fragments after phacoemulsification in a 65 year old male presenting one month after surgery. | 10    |
| 4. Risk factors, classification and management of retinopathy of prematurity.   | 2+4+4 |
| 5. Classification and management of amblyopia.  | 5+5   |

**P.T.O.**



**OPHTHALMOLOGY****PAPER – III****Please read carefully the important instructions mentioned on Page '1'**

- *Answers to questions of Part 'A' and Part 'B' are to be strictly attempted in separate answer sheet(s) and the main + supplementary answer sheet(s) used for each part must be tagged separately.*
- *Answers to questions of Part 'A' attempted in answer sheet(s) of Part 'B' or vice versa shall not be evaluated.*

**PART B**

- |   |         |
|---|---------|
| 6. Classification and principles in the management of Duane Retraction Syndrome.  | 5+5     |
| 7. Management of unilateral congenital cataract in a 3 year old child.  | 10      |
| 8. Clinical features, diagnosis, differential diagnosis and management of idiopathic polypoidal choroidal vasculopathy. | 2+2+2+4 |
| 9. Clinical features and management of intermediate uveitis.  | 4+6     |
| 10. Differentiating features between Retinoschisis and Rhegmatogenous Retinal Detachment.                               | 10      |

\*\*\*\*\*

**OPHTHALMOLOGY****PAPER – IV**

OPH/D/16/26/IV

Time : 3 hours  
Max. Marks : 100**IMPORTANT INSTRUCTIONS**

- *This question paper consists of 10 questions divided into Part 'A' and Part 'B', each part containing 5 questions.*
- *Answers to questions of Part 'A' and Part 'B' are to be strictly attempted in separate answer sheet(s) and the main + supplementary answer sheet(s) used for each part must be tagged separately.*
- *Answers to questions of Part 'A' attempted in answer sheet(s) of Part 'B' or vice versa shall not be evaluated.*
- *Answer sheet(s) of Part 'A' and Part 'B' are not to be tagged together.*
- *Part 'A' and Part 'B' should be mentioned only on the covering page of the respective answer sheet(s).*
- *Attempt all questions in order.*
- *Each question carries 10 marks.*
- *Read the question carefully and answer to the point neatly and legibly.*
- *Do not leave any blank pages between two answers.*
- *Indicate the question number correctly for the answer in the margin space.*
- *Answer all the parts of a single question together.*
- *Start the answer to a question on a fresh page or leave adequate space between two answers.*
- *Draw table/diagrams/flowcharts wherever appropriate.*

Write short notes on:

**PART A**

- |   |         |
|---|---------|
| 1. A 60 year old diabetic male presented with sudden onset diminution of vision one week after uneventful cataract surgery. Give differential diagnosis and management algorithm. | 4+6     |
| 2. Corneal ring segments – indications and complications.   | 5+5     |
| 3. SMILE in refractive surgery: Advantages and disadvantages over conventional LASIK surgery.   | 10      |
| 4. Anti-metabolites in glaucoma filtration surgery: Agents, doses and mode of delivery.   | 3+3+4   |
| 5. What is a Bionic Eye? What are the principles of its working and enumerate its indications?  | 3+(5+2) |

**P.T.O.**

**OPHTHALMOLOGY**

## PAPER – IV

**Please read carefully the important instructions mentioned on Page '1'**

- *Answers to questions of Part 'A' and Part 'B' are to be strictly attempted in separate answer sheet(s) and the main + supplementary answer sheet(s) used for each part must be tagged separately.*
- *Answers to questions of Part 'A' attempted in answer sheet(s) of Part 'B' or vice versa shall not be evaluated.*

**PART B**

- |     |  |       |
|-----|--|-------|
| 6.  | a) What is UBM?  | 3+3+4 |
|     | b) Indications of use of this diagnostic modality.                       |       |
|     | c) Enumerate conditions where it is a preferred mode of investigation.   |       |
| 7.  | a) Role of newer anti-viral agents used in Ophthalmology.                | 5+5   |
|     | b) What are the specific advantages of these over available anti-virals? |       |
| 8.  | Management of astigmatism in a:  | 5+5   |
|     | i) 20 year old male, and   |       |
|     | ii) 50 year old male with cataract.                                      |       |
| 9.  | Clinical features, diagnosis and management of retinal vein occlusions.  | 2+3+5 |
| 10. | Indications of fibrin glue in Ophthalmology.                             | 10    |

\*\*\*\*\*



**OPHTHALMOLOGY****PAPER – I**

OPH/J/16/26/I

Time : 3 hours  
Max. Marks : 100

**IMPORTANT INSTRUCTIONS**

- *This question paper consists of 10 questions divided into Part 'A' and Part 'B', each part containing 5 questions.*
- *Answers to questions of Part 'A' and Part 'B' are to be strictly attempted in separate answer sheet(s) and the main + supplementary answer sheet(s) used for each part must be tagged separately.*
- *Answers to questions of Part 'A' attempted in answer sheet(s) of Part 'B' or vice versa shall not be evaluated.*
- *Answer sheet(s) of Part 'A' and Part 'B' are not to be tagged together.*
- *Part 'A' and Part 'B' should be mentioned only on the covering page of the respective answer sheet(s).*
- *Attempt all questions in order.*
- *Each question carries 10 marks.*
- *Read the question carefully and answer to the point neatly and legibly.*
- *Do not leave any blank pages between two answers.*
- *Indicate the question number correctly for the answer in the margin space.*
- *Answer all the parts of a single question together.*
- *Start the answer to a question on a fresh page or leave adequate space between two answers.*
- *Draw table/diagrams/flowcharts wherever appropriate.*

Write short notes on:

**PART A**

- |   |         |
|---|---------|
| 1. a) Anatomy & development of crystalline lens and zonules.  | (4+4)+2 |
| b) Enumerate congenital anomalies of lens.  |         |
| 2. a) Principle and optics of retinoscopy.  | 6+4     |
| b) What are the problems of retinoscopy?  |         |
| 3. Blood supply of optic nerve head and intraorbital optic nerve with well-labeled diagrams, and highlight its clinical importance. | 7+3     |
| 4. Anatomy and physiology of corneal endothelium.   | 5+5     |
| 5. Anatomy, biochemical composition and physiological roles of retinal pigment epithelium.  | 4+2+4   |

**P.T.O.**

**OPHTHALMOLOGY****PAPER – I****Please read carefully the important instructions mentioned on Page '1'**

- *Answers to questions of Part 'A' and Part 'B' are to be strictly attempted in separate answer sheet(s) and the main + supplementary answer sheet(s) used for each part must be tagged separately.*
- *Answers to questions of Part 'A' attempted in answer sheet(s) of Part 'B' or vice versa shall not be evaluated.*

**PART B**

- |     |   |         |
|-----|---|---------|
| 6.  | a) Various types of eye movements.  | 5+5     |
|     | b) Various neuroanatomic pathways controlling eye movements.                    |         |
| 7.  | a) What is contrast sensitivity?  | 2+4+4   |
|     | b) What are various methods to measure it?                                      |         |
|     | c) How do different types of intraocular lenses influence contrast sensitivity? |         |
| 8.  | a) Aqueous humour dynamics.   | 5+5     |
|     | b) Vascular endothelial growth factors  |         |
| 9.  | a) What are various preservatives in eye drops?                                 | 4+(3+3) |
|     | b) What are their side effects and how does one treat them?                     |         |
| 10. | a) Tests of significance  | 4+3+3   |
|     | b) Standard deviation   |         |
|     | c) Confidence interval  |         |

\*\*\*\*\*

**OPHTHALMOLOGY****PAPER – II**

OPH/J/16/26/II

Time : 3 hours

Max. Marks : 100

**IMPORTANT INSTRUCTIONS**

- ***This question paper consists of 10 questions divided into Part 'A' and Part 'B', each part containing 5 questions.***
- ***Answers to questions of Part 'A' and Part 'B' are to be strictly attempted in separate answer sheet(s) and the main + supplementary answer sheet(s) used for each part must be tagged separately.***
- ***Answers to questions of Part 'A' attempted in answer sheet(s) of Part 'B' or vice versa shall not be evaluated.***
- ***Answer sheet(s) of Part 'A' and Part 'B' are not to be tagged together.***
- ***Part 'A' and Part 'B' should be mentioned only on the covering page of the respective answer sheet(s).***
- ***Attempt all questions in order.***
- ***Each question carries 10 marks.***
- ***Read the question carefully and answer to the point neatly and legibly.***
- ***Do not leave any blank pages between two answers.***
- ***Indicate the question number correctly for the answer in the margin space.***
- ***Answer all the parts of a single question together.***
- ***Start the answer to a question on a fresh page or leave adequate space between two answers.***
- ***Draw table/diagrams/flowcharts wherever appropriate.***

Write short notes on:

**PART A**

- |   |       |
|---|-------|
| 1. A 27 year old male presents with acute periorbital swelling, redness and pain. How will you investigate, diagnose and treat this case?   | 3+3+4 |
| 2. A 30 year old female got up at night with severe pain and watering in left eye. She gave history of a nail injury to her eye 1 year back. How would you approach and manage such a case? | 10    |
| 3. Pathology of various age related macular lesions.  | 10    |
| 4. How will you diagnose, treat and manage complications of a case of neovascular glaucoma?   | 2+4+4 |
| 5. A 27 year old driver developed left eye hypertropia following an accident. How will you diagnose and manage him?   | 4+6   |

**P.T.O.**

**OPHTHALMOLOGY****PAPER – II****Please read carefully the important instructions mentioned on Page ‘1’**

- *Answers to questions of Part ‘A’ and Part ‘B’ are to be strictly attempted in separate answer sheet(s) and the main + supplementary answer sheet(s) used for each part must be tagged separately.*
- *Answers to questions of Part ‘A’ attempted in answer sheet(s) of Part ‘B’ or vice versa shall not be evaluated.*

**PART B**

- |     |   |         |
|-----|---|---------|
| 6.  | a) Pathogenesis of diabetic macular edema.  | 5+5     |
|     | b) Various modalities of treatment available for treatment of diabetic macular edema.                               |         |
| 7.  | a) How will you workup a case for LASIK surgery?  | 3+(2+5) |
|     | b) What are the modalities available and which one is preferred and why?  |         |
| 8.  | a) Enumerate malignant tumors of eyelid.  | 2+5+3   |
|     | b) Clinical presentations and histopathology of sebaceous cell carcinoma.   |         |
|     | c) Outline the management strategy for 20mm sized sebaceous cell carcinoma of upper eyelid.                         |         |
| 9.  | Pathogenesis, diagnosis and management of a case of angle-recession glaucoma.                                       | 2+4+4   |
| 10. | What are the types, ocular clinical features and differential diagnosis of a case of juvenile idiopathic arthritis? | 3+4+3   |

\*\*\*\*\*



**OPHTHALMOLOGY****PAPER – III**

OPH/J/16/26/III

Time : 3 hours

Max. Marks : 100

**IMPORTANT INSTRUCTIONS**

- *This question paper consists of 10 questions divided into Part 'A' and Part 'B', each part containing 5 questions.*
- *Answers to questions of Part 'A' and Part 'B' are to be strictly attempted in separate answer sheet(s) and the main + supplementary answer sheet(s) used for each part must be tagged separately.*
- *Answers to questions of Part 'A' attempted in answer sheet(s) of Part 'B' or vice versa shall not be evaluated.*
- *Answer sheet(s) of Part 'A' and Part 'B' are not to be tagged together.*
- *Part 'A' and Part 'B' should be mentioned only on the covering page of the respective answer sheet(s).*
- *Attempt all questions in order.*
- *Each question carries 10 marks.*
- *Read the question carefully and answer to the point neatly and legibly.*
- *Do not leave any blank pages between two answers.*
- *Indicate the question number correctly for the answer in the margin space.*
- *Answer all the parts of a single question together.*
- *Start the answer to a question on a fresh page or leave adequate space between two answers.*
- *Draw table/diagrams/flowcharts wherever appropriate.*

Write short notes on:

**PART A**

- |  |       |
|--|-------|
| 1. Diagnosis and management of a case of unilateral ptosis with Jaw-winking phenomenon.  | 5+5   |
| 2. Various surgical approaches to the orbit with their respective indications and advantages.  | 5+5   |
| 3. A 34 year old lady presents with chronic inflammation and irritation of superior limbus. What is the most likely diagnosis, pathogenesis and management of the disease? | 2+3+5 |
| 4. a) What are the principles of lid reconstruction?<br>b) Indications, technique and complications of Cutler-Beard operation.   | 5+5   |
| 5. Principle, utility and advantages of:<br>a) Square edged optics<br>b) Aspheric optics<br>c) Heparin coated optics   | 2+4+4 |

**P.T.O.**

**OPHTHALMOLOGY****PAPER – III****Please read carefully the important instructions mentioned on Page '1'**

- *Answers to questions of Part 'A' and Part 'B' are to be strictly attempted in separate answer sheet(s) and the main + supplementary answer sheet(s) used for each part must be tagged separately.*
- *Answers to questions of Part 'A' attempted in answer sheet(s) of Part 'B' or vice versa shall not be evaluated.*

**PART B**

- |     |  |           |
|-----|--|-----------|
| 6.  | a) What is normal tension glaucoma?  | 2+8       |
|     | b) Etiopathogenesis, clinical characteristics and management of a case of normal tension glaucoma.   |           |
| 7.  | Various presentations of uveitis in spondylo-arthropathies.  | 10        |
| 8.  | a) What are the causes of macular hole?  | 2+(3+2+3) |
|     | b) How will you investigate, prognosticate and manage a case of Idiopathic macular hole?   |           |
| 9.  | A 6-year-old boy presents with unilateral leukocoria. What is the differential diagnosis and describe management of its most common cause? | 4+6       |
| 10. | a) How do you assess a case of congenital nystagmus?   | 4+6       |
|     | b) What are the surgical options available to manage a case of nystagmus?  |           |

\*\*\*\*\*

**OPHTHALMOLOGY****PAPER – IV**

OPH/J/16/26/IV

Time : 3 hours  
Max. Marks : 100**IMPORTANT INSTRUCTIONS**

- *This question paper consists of 10 questions divided into Part 'A' and Part 'B', each part containing 5 questions.*
- *Answers to questions of Part 'A' and Part 'B' are to be strictly attempted in separate answer sheet(s) and the main + supplementary answer sheet(s) used for each part must be tagged separately.*
- *Answers to questions of Part 'A' attempted in answer sheet(s) of Part 'B' or vice versa shall not be evaluated.*
- *Answer sheet(s) of Part 'A' and Part 'B' are not to be tagged together.*
- *Part 'A' and Part 'B' should be mentioned only on the covering page of the respective answer sheet(s).*
- *Attempt all questions in order.*
- *Each question carries 10 marks.*
- *Read the question carefully and answer to the point neatly and legibly.*
- *Do not leave any blank pages between two answers.*
- *Indicate the question number correctly for the answer in the margin space.*
- *Answer all the parts of a single question together.*
- *Start the answer to a question on a fresh page or leave adequate space between two answers.*
- *Draw table/diagrams/flowcharts wherever appropriate.*

**PART A**

Write short notes on:

- |   |           |
|---|-----------|
| 1. a) Systemic associations of Ectopia lentis.  | 4+6       |
| b) Management of a case of Ectopia lentis.  |           |
| 2. Etiology, types, clinical picture, differential diagnosis and management of myasthenia gravis.                                     | 2+1+2+2+3 |
| 3. A 65 year old diabetic man presents with painless diminution of vision with vitreous haze. How will you investigate and treat him? | 5+5       |
| 4. Etiopathogenesis, clinical picture, differential diagnosis and management of thyroid orbitopathy.                                  | 2+3+2+3   |
| 5. a) What is VEGF-Trap?  | 5+5       |
| b) What are its advantages over the current anti-VEGF agents?   |           |

**P.T.O.**

**OPHTHALMOLOGY****PAPER – IV****Please read carefully the important instructions mentioned on Page '1'**

- *Answers to questions of Part 'A' and Part 'B' are to be strictly attempted in separate answer sheet(s) and the main + supplementary answer sheet(s) used for each part must be tagged separately.*
- *Answers to questions of Part 'A' attempted in answer sheet(s) of Part 'B' or vice versa shall not be evaluated.*

**PART B**

- |  |         |
|--|---------|
| 6. What is the concept and its applications in various full range IOLs such as Multifocals, accommodative, Pseudo-accommodative and extended-range IOLs? | 2.5x4   |
| 7. How will you diagnose, investigate and treat a case of acute anterior ischemic optic neuropathy?  | 2+4+4   |
| 8. What is the presentation, clinical features and management of a case of serpiginous choroidopathy?  | 2+4+4   |
| 9. a) What are the recent modalities available to treat Presbyopia?<br>b) What are their advantages and limitations?                                     | 2+(4+4) |
| 10. What is OCT? What are its advantages over conventional imaging? Name the conditions where it helps in precise diagnosis?                             | 2+6+2   |

\*\*\*\*\*



**OPHTHALMOLOGY****PAPER-I**TIME : 3 HOURS  
MAX. MARKS : 100

OPH/D/17/26/I

**IMPORTANT INSTRUCTIONS**

- This question paper consists of 10 questions divided into Part "A" and part 'B', each part containing 5 questions.
- Answers to question of part A and part B are to be strictly attempted in separate answer sheet(s) and the main + supplementary answer sheet(s) used for each part must be tagged separately.
- Answers to questions of Part A attempted in answer sheet(s) of part B or Vice versa shall not be evaluated.
- Answer sheets of Part A and Part B are not to be tagged together.
- Part and Part B should be mentioned only on the covering page of the respective answer sheets.
- Attempt all questions in order
- Each question carries 10 marks
- Read the question carefully and answer to the point neatly and legibly.
- Do not leave any blank pages between two answers
- Indicate the question number correctly for the answer in the margin space.
- Answer all the parts of a single question together.
- Start the answer to a question on a fresh page or leave adequate space between two answers.
- Draw table/diagrams/flowcharts wherever appropriate

Write Short notes on:

**PART A**

- |    |  |         |
|----|--|---------|
| 1. | a) Anatomy and development of lacrimal drainage system                                     | (4+3)+3 |
|    | b) Developmental anomalies of lacrimal passages  |         |
| 2. | a) Theories of colour vision   | 4+6     |
|    | b) Methods of colour vision evaluation   |         |
| 3. | Optics of operating microscope with neat labeled diagram                                   | 10      |
| 4. | a) Mechanism of accommodation  | 4+(3+3) |
|    | b) Anomalies of accommodation and their management   |         |
| 5. | Anatomy and relations of the surgical spaces of the orbit, and their clinical implications | 6+4     |

**OPHTHALMOLOGY****PAPER-I****Please read carefully the important instructions mentioned on Page '1'**

- Answers to questions of Part A and part B are to be strictly attempted in separate answer sheet(s) and the main+ supplementary answer sheets used for each part must be tagged separately.
- Answer s to questions of Part A attempted in answer sheet(s) of Part B or vice versa shall not be evaluated.

**PART B**

- |     |  |         |
|-----|--|---------|
| 6.  | a) Etiology and classification of myopia   | (3+3)+4 |
|     | b) Clinical features of pathological myopia  |         |
| 7.  | Commonly used preservatives for ophthalmic preparations, their advantages and disadvantages. | 4+3+3   |
| 8.  | a) Metabolism of crystalline lens.   | 4+6     |
|     | b) Biochemical factors responsible for cataractogenesis                                      |         |
| 9.  | Define abnormal retinal correspondence. Explain its development and methods of diagnosis.    | 2+(4+4) |
| 10. | a) Anatomy of eyelid and its blood supply  | 5+5     |
|     | b) Anatomy of LPS and its clinical importance  |         |

\*\*\*\*\*

**OPHTHALMOLOGY****PAPER-II**TIME : 3 HOURS  
MAX. MARKS : 100

OPH/D/17/26/II

**IMPORTANT INSTRUCTIONS**

- This question paper consists of 10 questions divided into Part "A" and part "B", each part containing 5 questions.
- Answers to question of part A and part B are to be strictly attempted in separate answer sheet(s) and the main + supplementary answer sheet(s) used for each part must be tagged separately.
- Answers to questions of Part A attempted in answer sheet(s) of part B or Vice versa shall not be evaluated.
- Answer sheets of Part A and Part B are not to be tagged together.
- Part and Part B should be mentioned only on the covering page of the respective answer sheets.
- Attempt all questions in order
- Each question carries 10 marks
- Read the question carefully and answer to the point neatly and legibly.
- Do not leave any blank pages between two answers
- Indicate the question number correctly for the answer in the margin space.
- Answer all the parts of a single question together.
- Start the answer to a question on a fresh page or leave adequate space between two answers.
- Draw table/diagrams/flowcharts wherever appropriate

Write Short notes on:

**PART A**

- |  |       |
|--|-------|
| 1. Differential diagnosis, evaluation and management of unilateral disc oedema.                    | 3+3+4 |
| 2. Causes, evaluation and management of lagophthalmus.   | 3+3+4 |
| 3. Clinical features, investigations and management of ocular sarcoidosis.                         | 3+3+4 |
| 4. a) Effect of blunt trauma on normal lens.<br>b) Management of subluxated lens following trauma. | 5+5   |
| 5. Causes and management of neovascular glaucoma.  | 5+5   |

**OPHTHALMOLOGY****PAPER-II****Please read carefully the important instructions mentioned on Page '1'**

- Answers to questions of Part A and part B are to be strictly attempted in separate answer sheet(s) and the main+ supplementary answer sheets used for each part must be tagged separately.
- Answer s to questions of Part A attempted in answer sheet(s) of Part B or vice versa shall not be evaluated.

**PART B**

- |     |  |         |
|-----|--|---------|
| 6.  | Clinical presentation, differential diagnosis and management of recurrent herpes simplex keratitis.                                    | 3+3+4   |
| 7.  | A 65 year old lady presents with progressively increasing upper lid mass (15mm x 10mm). Discuss differential diagnosis and management. | 4+6     |
| 8.  | Causes, investigations and management of acute onset III nerve palsy.  | 4+3+3   |
| 9.  | Clinical features, differential diagnosis and management of ophthalmia neonatorum.   | 3+3+4   |
| 10. | Etiopathogenesis, clinical features, investigations and management of central retinal arterial occlusion.                              | 2+2+3+3 |

\*\*\*\*\*



**OPHTHALMOLOGY****PAPER-III**TIME : 3 HOURS  
MAX. MARKS : 100

OPH/D/17/26 /III

**IMPORTANT INSTRUCTIONS**

- This question paper consists of 10 questions divided into Part 'A' and part 'B', each part containing 5 questions.
- Answers to question of part A and part B are to be strictly attempted in separate answer sheet(s) and the main + supplementary answer sheet(s) used for each part must be tagged separately.
- Answers to questions of Part A attempted in answer sheet(s) of part B or Vice versa shall not be evaluated.
- Answer sheets of Part A and Part B are not to be tagged together.
- Part and Part B should be mentioned only on the covering page of the respective answer sheets.
- Attempt all questions in order
- Each question carries 10 marks
- Read the question carefully and answer to the point neatly and legibly.
- Do not leave any blank pages between two answers
- Indicate the question number correctly for the answer in the margin space.
- Answer all the parts of a single question together.
- Start the answer to a question on a fresh page or leave adequate space between two answers.
- Draw table/diagrams/flowcharts wherever appropriate

Write Short notes on:

**PART A**

- |   |         |
|---|---------|
| 1. Etiopathogenesis and management modalities of senile entropion.                                      | 4+6     |
| 2. Etiopathogenesis, clinical features and management of unilateral ptosis with Marcus Gunn phenomenon. | 3+4+3   |
| 3. Etiology, methods of evaluation and management of macular hole.                                      | 3+3+4   |
| 4. Etiopathogenesis and management of exudative retinal detachment.                                     | 5+5     |
| 5. Indications and techniques of orbital exenteration. Discuss the methods of rehabilitation.           | (4+4)+2 |

**OPHTHALMOLOGY****PAPER-III****Please read carefully the important instructions mentioned on Page '1'**

- Answers to questions of Part A and part B are to be strictly attempted in separate answer sheet(s) and the main+ supplementary answer sheets used for each part must be tagged separately.
- Answers to questions of Part A attempted in answer sheet(s) of Part B or vice versa shall not be evaluated.

**PART B**

- |  |         |
|--|---------|
| 6. Classify exotropia in children. Discuss its management.   | 5+5     |
| 7. Indications and techniques of surgical correction of myopia.                                      | 2+8     |
| 8. Indications, procedure and complications of glaucoma drainage devices.                            | 3+3+4   |
| 9. Indications, techniques, advantages and disadvantages of deep anterior lamellar keratoplasty.     | 2+2+3+3 |
| 10. Discuss the role of Silicon oil in VR surgery. Describe its complications and method of removal. | 4+(4+2) |

\*\*\*\*\*

**OPHTHALMOLOGY****PAPER-IV**TIME : 3 HOURS  
MAX. MARKS : 100

OPH/D/17/26 /IV

**IMPORTANT INSTRUCTIONS**

- This question paper consists of 10 questions divided into Part 'A' and part 'B', each part containing 5 questions.
- Answers to question of part A and part B are to be strictly attempted in separate answer sheet(s) and the main + supplementary answer sheet(s) used for each part must be tagged separately.
- Answers to questions of Part A attempted in answer sheet(s) of part B or Vice versa shall not be evaluated.
- Answer sheets of Part A and Part B are not to be tagged together.
- Part and Part B should be mentioned only on the covering page of the respective answersheets.
- Attempt all questions in order
- Each question carries 10 marks
- Read the question carefully and answer to the point neatly and legibly.
- Do not leave any blank pages between two answers
- Indicate the question number correctly for the answer in the margin space.
- Answer all the parts of a single question together.
- Start the answer to a question on a fresh page or leave adequate space between two answers.
- Draw table/diagrams/flowcharts wherever appropriate

Write Short notes on:

**PART A**

- |  |             |
|--|-------------|
| 1. Etiopathogenesis, clinical features and management of thyroid orbitopathy.                      | 2+4+4       |
| 2. Diagnosis and management of non-resolving diabetic macular oedema.                              | 5+5         |
| 3. Etiology, evaluation, classification and management of retinopathy of prematurity.              | 2+2+3+3     |
| 4. a) Principle and uses of UBM.<br>b) Its advantages and disadvantages over anterior segment OCT. | (2+2)+(3+3) |
| 5. What are phakic IOLs? Discuss their indications, techniques and complications.                  | 2+(3+2+3)   |

**OPHTHALMOLOGY****PAPER-IV****Please read carefully the important instructions mentioned on Page '1'**

- Answers to questions of Part A and part B are to be strictly attempted in separate answer sheet(s) and the main+ supplementary answer sheet(s) used for each part must be tagged separately.
- Answer s to questions of Part A attempted in answer sheets() of Part B or vice versa shall not be evaluated.

**PART B**

- |     |   |             |
|-----|---|-------------|
| 6.  | a) Role of immunosuppressive drugs in ophthalmic conditions.  | 4+(4+2)     |
|     | b) Enumerate the commonly used drugs with their dosage and complications.   |             |
| 7.  | Define and classify xerophthalmia. Give the guidelines of treatment and prophylaxis.  | (2+4)+(2+2) |
| 8.  | Etiology, clinical features, diagnosis and differential diagnosis of Horner's Syndrome.   | 3+2+3+2     |
| 9.  | Causes and ocular manifestations of chiasmal lesions.   | 3+7         |
| 10. | Pathogenesis, clinical features, diagnosis and management of different grades of retinopathy in pregnancy induced hypertension. | 2+2+3+3     |

\*\*\*\*\*



**OPHTHALMOLOGY****PAPER – I**

OPH/J/17/26/I

Time : 3 hours

Max. Marks : 100

**Important instructions:**

- Attempt all questions in order.
- Each question carries 10 marks.
- Read the question carefully and answer to the point neatly and legibly.
- Do not leave any blank pages between two answers.
- Indicate the question number correctly for the answer in the margin space.
- Answer all the parts of a single question together.
- Start the answer to a question on a fresh page or leave adequate space between two answers.
- Draw table/diagrams/flowcharts wherever appropriate.

Write short notes on:

- |   |           |
|---|-----------|
| 1. a) Anatomy and development of angle of anterior chamber (AC) of eye.   | (4+3)+3   |
| b) Developmental anomalies of angle of AC.  |           |
| 2. a) Classification and components of hypermetropia.   | 4+6       |
| b) Approach for subjective verification of refraction.  |           |
| 3. a) Structure of tear film.   | 4+6       |
| b) Methods to evaluate tear film disorders.   |           |
| 4. a) Transparency of cornea.   | 3+(2+2+3) |
| b) Clinical features, etiology and management of corneal edema.   |           |
| 5. a) What are the types of prospective studies and their advantages?   | 6+4       |
| b) What are the methods to avoid bias in a study?   |           |
| 6. a) Labeled diagram of Sturm's conoid.  | 3+3+4     |
| b) Classify astigmatisms with example.  |           |
| c) Methods to treat astigmatism.  |           |
| 7. a) Pupillary pathways with diagram.  | 5+5       |
| b) Causes, grading and clinical importance of relative afferent pupillary defect.   |           |
| 8. a) Optical principle of multifocal intra ocular lens (MF-IOL).   | 2+4+4     |
| b) Classify MF-IOL.   |           |
| c) Enumerate the patient selection criteria for MF-IOL.   |           |
| 9. a) Anatomy of superior orbital fissure.  | 5+5       |
| b) Anatomy of cavernous sinus.  |           |
| 10. Methods to increase the ocular bioavailability and efficacy of drugs used in treatment of ocular disorders, along with example. | 10        |

\*\*\*\*\*

**OPHTHALMOLOGY****PAPER – II**

OPH/J/17/26/II

Time : 3 hours

Max. Marks : 100

**Important instructions:**

- Attempt all questions in order.
- Each question carries 10 marks.
- Read the question carefully and answer to the point neatly and legibly.
- Do not leave any blank pages between two answers.
- Indicate the question number correctly for the answer in the margin space.
- Answer all the parts of a single question together.
- Start the answer to a question on a fresh page or leave adequate space between two answers.
- Draw table/diagrams/flowcharts wherever appropriate.

Write short notes on:

- |   |           |
|---|-----------|
| 1. a) Etiopathogenesis of flat anterior chamber after glaucoma surgery.   | 5+5       |
| b) How would you critically evaluate and manage such a case?  |           |
| 2. Etiology, clinical features and management of a case of pediatric epiphora.  | 2+4+4     |
| 3. Etiopathogenesis, clinical features and management of chronic, non-healing peripheral corneal ulcer.                                     | 3+3+4     |
| 4. a) Classification of scleritis.  | 2+(2+3+3) |
| b) Clinical features, investigation and management of scleritis.  |           |
| 5. Classification, clinical features, diagnosis and management of choroidal melanoma.   | 2+2+2+4   |
| 6. a) What are the causes of complicated cataract?  | 2+8       |
| b) Principles of management of cataract associated with chronic anterior uveitis.   |           |
| 7. A middle aged female presents with unilateral proptosis of one year duration. Discuss differential diagnosis, evaluation and management. | 3+4+3     |
| 8. Etiopathogenesis, clinical features, investigation and management of central retinal vein occlusion.                                     | 2+2+2+4   |
| 9. Clinical features, evaluation and management of alkali ocular injury.  | 2+3+5     |
| 10. Clinical features, diagnostic investigations and management of ocular tuberculosis.   | 2+4+4     |

\*\*\*\*\*

**OPHTHALMOLOGY****PAPER – III**

OPH/J/17/26/III

Time : 3 hours

Max. Marks : 100

**Important instructions:**

- *Attempt all questions in order.*
- *Each question carries 10 marks.*
- *Read the question carefully and answer to the point neatly and legibly.*
- *Do not leave any blank pages between two answers.*
- *Indicate the question number correctly for the answer in the margin space.*
- *Answer all the parts of a single question together.*
- *Start the answer to a question on a fresh page or leave adequate space between two answers.*
- *Draw table/diagrams/flowcharts wherever appropriate.*

Write short notes on:

- |  |         |
|--|---------|
| 1. Causes, clinical presentation and treatment modalities for pseudophakic bullous keratopathy.                                | 3+2+5   |
| 2. Management strategies of unilateral and bilateral congenital cataract in a 2 year old child.                                | 5+5     |
| 3. Pathogenesis, clinical features, diagnosis and management of various types of diabetic macular edema.                       | 2+2+2+4 |
| 4. Principles and techniques of lid reconstruction.  | 3+7     |
| 5. Clinical features, laboratory investigations and management of post cataract surgery endophthalmitis.                       | 3+2+5   |
| 6. Causes and management of glaucoma associated with ocular trauma.  | 3+7     |
| 7. Basic guidelines and management of ptosis in a 3 year old child.  | 4+6     |
| 8. Clinical features and management of cases of CMV retinitis and toxoplasmic retinitis.                                       | 5+5     |
| 9. a) What are the causes of cicatricial entropion?<br>b) Common techniques for correction of trachomatous upperlid entropion. | 3+7     |
| 10. Classification and management of esotropia in children.  | 4+6     |

\*\*\*\*\*

**OPHTHALMOLOGY**

## PAPER – IV

OPH/J/17/26/IV

Time : 3 hours

Max. Marks : 100

**Important instructions:**

- Attempt all questions in order.
- Each question carries 10 marks.
- Read the question carefully and answer to the point neatly and legibly.
- Do not leave any blank pages between two answers.
- Indicate the question number correctly for the answer in the margin space.
- Answer all the parts of a single question together.
- Start the answer to a question on a fresh page or leave adequate space between two answers.
- Draw table/diagrams/flowcharts wherever appropriate.

Write short notes on:

- |   |       |
|---|-------|
| 1. Clinical features, diagnostic tests and management of retained intraocular foreign body.   | 3+3+4 |
| 2. Contact lens options in keratoconus and irregular corneas with high astigmatism.   | 10    |
| 3. Classify and mention briefly about different anti-VEGF agents and their uses in ophthalmology.   | 2+2+6 |
| 4. Common systemic medications and ocular toxicity.   | 10    |
| 5. Management of intractable glaucoma or multiple failed glaucoma surgeries.  | 10    |
| 6. a) Principle of optical coherence tomography.<br>b) Indications of use of above modality in different ocular conditions.<br>c) Recent advances in OCT.                             | 2+5+3 |
| 7. a) Current techniques for management of recurrent pterygium.<br>b) P.E.R.F.E.C.T technique for pterygium management  | 7+3   |
| 8. Critically evaluate DSEK/DSEK & DMEK.  | 5+5   |
| 9. a) Management of a 2 disc diameter raised retinoblastoma in a 3 year old child.<br>b) Recent advances in the management of retinoblastoma.   | 7+3   |
| 10. a) What are orbital implants and their indications?<br>b) Enumerate different materials of orbital implants.<br>c) What are the advantages and complications of orbital implants? | 3+3+4 |

\*\*\*\*\*



**OPHTHALMOLOGY**  
**PAPER-I**TIME: 3 HOURS  
MAX. MARKS: 100

OPH/D/18/26/I

**IMPORTANT INSTRUCTIONS**

- This question paper consists of 10 questions divided into Part "A" and part "B", each part containing 5 questions.
- Answers to questions of part A and part B are to be strictly attempted in separate answer sheet(s) and the main + supplementary answer sheet(s) used for each part must be tagged separately.
- Answers to question(s) of Part A attempted in answer sheet(s) of part B or Vice versa shall not be evaluated.
- Answer sheets of Part A and Part B are not to be tagged together.
- Part A and Part B should be mentioned only on the covering page of the respective answer sheets.
- Attempt all questions in order.
- Each question carries 10 marks.
- Read the question carefully and answer to the point neatly and legibly.
- Do not leave any blank pages between two answers.
- Indicate the question number correctly for the answer in the margin space.
- Answer all the parts of a single question together.
- Start the answer to a question on a fresh page or leave adequate space between two answers.
- Draw table/diagrams/flowcharts wherever appropriate.

**Write Short notes on:****PART A**

1. a) Electrophysiological basis of Electroretinography (ERG) 5+5  
and Electro-oculography (EOG).  
b) Clinical applications of ERG and EOG.
2. a) Anatomy and relations of the medial and lateral orbital 5+2+3  
wall.  
b) Indications of orbital decompression.  
c) Common causes of severe bleed during external dacryocystorhinorhaphy (DCR).
3. a) Types of afferent pupillary defect. 4+3+3  
b) Causes of light-near dissociation.  
c) Pharmacological tests for Horner syndrome.
4. a) Ultra-structure of the trabecular meshwork. 4+3+3  
b) Mechanisms of aqueous formation.  
c) Physiology of aqueous humour drainage through trabecular meshwork.
5. a) Neural pathway for tear secretion by lacrimal gland. 3+4+3  
b) Test for evaluation of tear film.  
c) Etiopathogenesis of Sjogren syndrome.

P.T.O

**OPHTHALMOLOGY**  
**PAPER-I****Please read carefully the important instructions mentioned on Page '1'**

- Answers to questions of Part A and part B are to be strictly attempted in separate answer sheets and the main + supplementary answer sheets used for each part must be tagged separately.
- Answers to question(s) of Part A attempted in answer sheets of Part B or vice versa shall not be evaluated.

**PART B**

- |     |  |         |
|-----|--|---------|
| 6.  | a) Chemical fixatives for histopathological examination of ophthalmic specimens.                           | 4+6     |
|     | b) Application of routine and special stains in histopathology.  |         |
| 7.  | Discuss various preoperative and perioperative aseptic approaches for prevention of intraocular infection. | 10      |
| 8.  | a) Define and enumerate vital dyes used in Ophthalmology.  | (1+2)+7 |
|     | b) Clinical applications of vital dyes in diagnosis and treatment of ophthalmic diseases.                  |         |
| 9.  | a) Sensory adaptation to strabismus.   | 3+3+4   |
|     | b) What is fusional vergence?  |         |
|     | c) Tests to measure visual acuity in preverbal children.   |         |
| 10. | a) Essential components of modular ophthalmic operating room.  | 5+5     |
|     | b) Disinfection and sterilization of operating room.   |         |

\*\*\*\*\*

**OPHTHALMOLOGY**  
**PAPER-II**TIME: 3 HOURS  
MAX. MARKS: 100

OPH/D/18/26/II

**IMPORTANT INSTRUCTIONS**

- This question paper consists of 10 questions divided into Part "A" and part "B", each part containing 5 questions.
- Answers to questions of part A and part B are to be strictly attempted in separate answer sheet(s) and the main + supplementary answer sheet(s) used for each part must be tagged separately.
- Answers to question(s) of Part A attempted in answer sheet(s) of part B or Vice versa shall not be evaluated.
- Answer sheets of Part A and Part B are not to be tagged together.
- Part A and Part B should be mentioned only on the covering page of the respective answer sheets.
- Attempt all questions in order.
- Each question carries 10 marks.
- Read the question carefully and answer to the point neatly and legibly.
- Do not leave any blank pages between two answers.
- Indicate the question number correctly for the answer in the margin space.
- Answer all the parts of a single question together.
- Start the answer to a question on a fresh page or leave adequate space between two answers.
- Draw table/diagrams/flowcharts wherever appropriate.

**Write Short notes on:****PART A**

- |   |       |
|---|-------|
| 1. Clinical features, evaluation and management of Meibomian gland disease.   | 3+3+4 |
| 2. a) Etiopathogenesis and clinical features of cicatricial conjunctivitis.<br>b) Complications and management of cicatricial conjunctivitis.                   | 5+5   |
| 3. A 64-year-old individual presents with sudden profound unilateral loss of vision. Discuss aetiology, evaluation and management.                              | 3+2+5 |
| 4. A 14-year-old boy is brought by his parents with occasional deviation of the eyes? Discuss differential diagnosis, evaluation and management of such a case. | 2+4+4 |
| 5. Clinical features, complications and management of a case of Herpes Zoster Ophthalmicus.   | 4+3+3 |

P.T.O

**OPHTHALMOLOGY**  
**PAPER-II****Please read carefully the important instructions mentioned on Page '1'**

- Answers to questions of Part A and part B are to be strictly attempted in separate answer sheets and the main + supplementary answer sheets used for each part must be tagged separately.
- Answers to question(s) of Part A attempted in answer sheets of Part B or vice versa shall not be evaluated.

**PART B**

- |  |         |
|--|---------|
| 6. Clinical features, causes, evaluation and management of a case endophthalmitis, six weeks after cataract surgery.                       | 2+2+3+3 |
| 7. a) Pathogenesis and differential diagnosis pigment dispersion syndrome.<br>b) Evaluation and management of pigment dispersion syndrome. | 5+5     |
| 8. a) Causes of heterochromia iridis.<br>b) Clinical features and management of Fuch's uveitis syndrome.                                   | 2+4+4   |
| 9. Clinical features, Investigations and treatment of a case of primary intraocular lymphoma.  | 2+3+5   |
| 10. Clinical features, investigations, treatment and prognosis in a case of CMV retinitis.   | 2+2+4+2 |

\*\*\*\*\*



**OPHTHALMOLOGY**  
**PAPER-II****Please read carefully the important instructions mentioned on Page '1'**

- Answers to questions of Part A and part B are to be strictly attempted in separate answer sheets and the main + supplementary answer sheets used for each part must be tagged separately.
- Answers to question(s) of Part A attempted in answer sheets of Part B or vice versa shall not be evaluated.

**PART B**

- |  |         |
|--|---------|
| 6. Clinical features, causes, evaluation and management of a case endophthalmitis, six weeks after cataract surgery.                       | 2+2+3+3 |
| 7. a) Pathogenesis and differential diagnosis pigment dispersion syndrome.<br>b) Evaluation and management of pigment dispersion syndrome. | 5+5     |
| 8. a) Causes of heterochromia iridis.<br>b) Clinical features and management of Fuch's uveitis syndrome.                                   | 2+4+4   |
| 9. Clinical features, Investigations and treatment of a case of primary intraocular lymphoma.  | 2+3+5   |
| 10. Clinical features, investigations, treatment and prognosis in a case of CMV retinitis.   | 2+2+4+2 |

\*\*\*\*\*

**OPHTHALMOLOGY**  
**PAPER-III**TIME: 3 HOURS  
MAX. MARKS: 100

OPH/D/18/26/III

**IMPORTANT INSTRUCTIONS**

- This question paper consists of 10 questions divided into Part "A" and part "B", each part containing 5 questions.
- Answers to questions of part A and part B are to be strictly attempted in separate answer sheet(s) and the main + supplementary answer sheet(s) used for each part must be tagged separately.
- Answers to question(s) of Part A attempted in answer sheet(s) of part B or Vice versa shall not be evaluated.
- Answer sheets of Part A and Part B are not to be tagged together.
- Part A and Part B should be mentioned only on the covering page of the respective answer sheets.
- Attempt all questions in order.
- Each question carries 10 marks.
- Read the question carefully and answer to the point neatly and legibly.
- Do not leave any blank pages between two answers.
- Indicate the question number correctly for the answer in the margin space.
- Answer all the parts of a single question together.
- Start the answer to a question on a fresh page or leave adequate space between two answers.
- Draw table/diagrams/flowcharts wherever appropriate.

**Write Short notes on:****PART A**

- |   |       |
|---|-------|
| 1. Causes , evaluation and management of eyelid retraction.   | 3+3+4 |
| 2. How will you evaluate and manage an anophthalmic socket in a 3-year-old child?   | 5+5   |
| 3. a) Evaluation of pre-existing astigmatism in a patient with cataract.<br>b) Various surgical methods to manage preoperative astigmatism during cataract surgery? | 4+6   |
| 4. a) Etiopathogenesis and clinical features of necrotising scleritis.<br>b) Evaluation and management of necrotising scleritis.                                    | 5+5   |
| 5. What are the predisposing factors, per-operative signs and management of a case of suprachoroidal hemorrhage during an intraocular surgery?                      | 3+3+4 |

P.T.O

**OPHTHALMOLOGY**  
**PAPER-III****Please read carefully the important instructions mentioned on Page '1'**

- Answers to questions of Part A and part B are to be strictly attempted in separate answer sheets and the main + supplementary answer sheets used for each part must be tagged separately.
- Answers to question(s) of Part A attempted in answer sheets of Part B or vice versa shall not be evaluated.

**PART B**

6. Evaluation and management during failure of filtration surgery in glaucoma. What are the indications of antimetabolite in this surgery? (4+4)+2
7. a) A 45-year-old patient presents with sudden onset vertical diplopia. What is the differential diagnosis? 3+(3+4)  
b) Evaluation and management of acute onset vertical diplopia.
8. a) Indications and evaluation of a case for lamellar keratoplasty. 5+2+3  
b) What are the causes of failure of a DSAEK procedure?  
c) How does DSAEK differ from DMEK surgically?
9. A 45-year-old patient presents with central scotoma. Discuss differential diagnosis, evaluation and management of such a case. 2+4+4
10. a) Indications and procedure for use of various tamponading agents in retinal surgery. 5+5  
b) Advantages and disadvantages of tamponading agents used in retinal surgery.

\*\*\*\*\*

**OPHTHALMOLOGY**  
**PAPER-IV**TIME: 3 HOURS  
MAX. MARKS: 100

OPH/D/18/26/IV

**IMPORTANT INSTRUCTIONS**

- This question paper consists of 10 questions divided into Part “A” and part “B”, each part containing 5 questions.
- Answers to questions of part A and part B are to be strictly attempted in separate answer sheet(s) and the main + supplementary answer sheet(s) used for each part must be tagged separately.
- Answers to question(s) of Part A attempted in answer sheet(s) of part B or Vice versa shall not be evaluated.
- Answer sheets of Part A and Part B are not to be tagged together.
- Part A and Part B should be mentioned only on the covering page of the respective answer sheets.
- Attempt all questions in order.
- Each question carries 10 marks.
- Read the question carefully and answer to the point neatly and legibly.
- Do not leave any blank pages between two answers.
- Indicate the question number correctly for the answer in the margin space.
- Answer all the parts of a single question together.
- Start the answer to a question on a fresh page or leave adequate space between two answers.
- Draw table/diagrams/flowcharts wherever appropriate.

**Write Short notes on:****PART A**

- |  |       |
|--|-------|
| 1. A 50-year-old female presents with abaxial proptosis. Discuss differential diagnosis, evaluation and management.  | 3+3+4 |
| 2. Clinical feature, evaluation and management of ocular cysticercosis.  | 2+3+5 |
| 3. Evaluation and management of a case presenting with iridodialysis.  | 4+6   |
| 4. A 60-year-old patient presents with nodulo-ulcerative lesion involving central lower lid. Discuss differential diagnosis, evaluation and management of such a case. | 2+3+5 |
| 5. How will you suspect, investigate and treat a case of preclinical keratoconus?  | 3+3+4 |

P.T.O.

**OPHTHALMOLOGY**  
**PAPER-IV****Please read carefully the important instructions mentioned on Page '1'**

- Answers to questions of Part A and part B are to be strictly attempted in separate answer sheets and the main + supplementary answer sheets used for each part must be tagged separately.
- Answers to question(s) of Part A attempted in answer sheets of Part B or vice versa shall not be evaluated.

**PART B**

- |  |         |
|--|---------|
| 6. Indications, procedure, advantages and disadvantages of chemo-reduction for retinoblastoma.   | 2+3+5   |
| 7. Evaluation and management of traumatic sub-retinal haemorrhage over the macula.   | 4+6     |
| 8. Evaluation and management of post uveitic cataract.   | 4+6     |
| 9. A patient present with central unilateral metamorphopsia. Discuss differential diagnosis, evaluation and management of such a case. | 3+3+4   |
| 10. a) Categories of low vision and classification low vision aids (LVA).<br>b) Evaluation of a patient with low vision.               | (2+3)+5 |

\*\*\*\*\*



**OPHTHALMOLOGY**  
**PAPER-IV****Please read carefully the important instructions mentioned on Page '1'**

- Answers to questions of Part A and part B are to be strictly attempted in separate answer sheets and the main + supplementary answer sheets used for each part must be tagged separately.
- Answers to question(s) of Part A attempted in answer sheets of Part B or vice versa shall not be evaluated.

**PART B**

- |  |         |
|--|---------|
| 6. Indications, procedure, advantages and disadvantages of chemo-reduction for retinoblastoma.   | 2+3+5   |
| 7. Evaluation and management of traumatic sub-retinal haemorrhage over the macula.   | 4+6     |
| 8. Evaluation and management of post uveitic cataract.   | 4+6     |
| 9. A patient present with central unilateral metamorphopsia. Discuss differential diagnosis, evaluation and management of such a case. | 3+3+4   |
| 10. a) Categories of low vision and classification low vision aids (LVA).<br>b) Evaluation of a patient with low vision.               | (2+3)+5 |

\*\*\*\*\*

OPHTHALMOLOGY

## PAPER-I

TIME: 3 HOURS  
MAX. MARKS: 100

OPH/J/18/26/I

**IMPORTANT INSTRUCTIONS**

- This question paper consists of 10 questions divided into Part “A” and part “B”, each part containing 5 questions.
- Answers to questions of part A and part B are to be strictly attempted in separate answer sheet(s) and the main + supplementary answer sheet(s) used for each part must be tagged separately.
- Answers to question(s) of Part A attempted in answer sheet(s) of part B or Vice versa shall not be evaluated.
- Answer sheets of Part A and Part B are not to be tagged together.
- Part A and Part B should be mentioned only on the covering page of the respective answer sheets.
- Attempt all questions in order.
- Each question carries 10 marks.
- Read the question carefully and answer to the point neatly and legibly.
- Do not leave any blank pages between two answers.
- Indicate the question number correctly for the answer in the margin space.
- Answer all the parts of a single question together.
- Start the answer to a question on a fresh page or leave adequate space between two answers.
- Draw table/diagrams/flowcharts wherever appropriate.

Write short notes on:

**PART A**

- |   |       |
|---|-------|
| 1. a) Anatomical structure of upper eyelid.                           | 5+3+2 |
| b) Its blood supply, venous drainage & lymphatic drainage.            |       |
| c) Clinical implications of its blood supply.                         |       |
| 2. a) Anatomy of the medial wall of orbit.                            | 5+3+2 |
| b) What is its importance in Orbital decompression?                   |       |
| c) What is the most common cause of severe bleed during external DCR? |       |
| 3. a) Detailed structure of retinal rods and cones.                   | 6+2+2 |
| b) Their distribution over the retina.                                |       |
| c) Implications in vision quality with rod and cone dysfunction.      |       |
| 4. a) What are mechanisms of aqueous formation?                       | 5+3+2 |
| b) Detailed anatomy of the trabecular meshwork and Schlemm canal.     |       |
| c) Optical principle to see the angle structures.                     |       |
| 5. a) What is a “Randomized Control Trial”?                           | 3+3+4 |
| b) What is randomization and why is it required?                      |       |
| c) What are confounding factors in a study and how to avoid them?     |       |

OPHTHALMOLOGY

## PAPER-I

**Please read carefully the important instructions mentioned on Page '1'**

- Answers to questions of Part A and part B are to be strictly attempted in separate answer sheets and the main + supplementary answer sheets used for each part must be tagged separately.
- Answers to question(s) of Part A attempted in answer sheets of Part B or vice versa shall not be evaluated.

**PART B**

- |   |             |
|---|-------------|
| 6. a) What is anisocoria and indications for its investigation?               | (1+3)+(4+2) |
| b) Give the physiological basis and causes of Light-near reflex dissociation. |             |
| 7. a) Name 3 commonly used Ophthalmic preservatives in topical medication.    | 1+4+5       |
| b) What are the adverse effects of preservatives in ophthalmic medications?   |             |
| c) What are the various means of preventing these adverse effects?            |             |
| 8. a) What is AC:A ratio for convergence?                                     | 1+5+4       |
| b) What are the methods of measuring it?                                      |             |
| c) Briefly discuss the disorders resulting from altered AC:A ratio.           |             |
| 9. a) What is the principle of Optical Coherence Biometry?                    | 2+2+6       |
| b) Which Ophthalmic equipment uses this principle?                            |             |
| c) What are the advantages and disadvantages of this type of biometry?        |             |
| 10. a) Metabolism of the lens in the eye.                                     | 4+6         |
| b) How does the lens maintain transparency?                                   |             |

\*\*\*\*\*

**OPHTHALMOLOGY**

## PAPER-II

TIME: 3 HOURS  
MAX. MARKS: 100

OPH/J/18/26/II

**IMPORTANT INSTRUCTIONS**

- This question paper consists of 10 questions divided into Part “A” and part “B”, each part containing 5 questions.
- Answers to questions of part A and part B are to be strictly attempted in separate answer sheet(s) and the main + supplementary answer sheet(s) used for each part must be tagged separately.
- Answers to question(s) of Part A attempted in answer sheet(s) of part B or Vice versa shall not be evaluated.
- Answer sheets of Part A and Part B are not to be tagged together.
- Part A and Part B should be mentioned only on the covering page of the respective answer sheets.
- Attempt all questions in order.
- Each question carries 10 marks.
- Read the question carefully and answer to the point neatly and legibly.
- Do not leave any blank pages between two answers.
- Indicate the question number correctly for the answer in the margin space.
- Answer all the parts of a single question together.
- Start the answer to a question on a fresh page or leave adequate space between two answers.
- Draw table/diagrams/flowcharts wherever appropriate.

Write short notes on:

**PART A**

- |   |           |
|---|-----------|
| 1. a) Pathogenesis and sequelae of cotton wool spots and hard exudates on retina in diabetic retinopathy. | 5+5       |
| b) Diagnostic features of HIV retinopathy and relationship to CD4 counts.                                 |           |
| 2. a) Enumerate causes of iris cysts.   | 3+7       |
| b) Discuss briefly the management of different types of iris cysts.                                       |           |
| 3. a) Aetiopathogenesis, clinical features and diagnosis of pseudoexfoliative glaucoma.                   | (3+3+2)+2 |
| b) Give specific features of true exfoliation in eye.   |           |
| 4. One and half syndrome – its cause and clinical features.   | 4+6       |
| 5. a) Siderosis bulbi - Clinical features   | 7+3       |
| b) ERG changes on electrophysiology in siderosis.   |           |

**OPHTHALMOLOGY****PAPER-II****Please read carefully the important instructions mentioned on Page '1'**

- Answers to questions of Part A and part B are to be strictly attempted in separate answer sheets and the main + supplementary answer sheets used for each part must be tagged separately.
- Answers to question(s) of Part A attempted in answer sheets of Part B or vice versa shall not be evaluated.

**PART B**

- |     |   |       |
|-----|---|-------|
| 6.  | A 25-year old man complaining of itching and redness of both eyes since childhood presents with gradually increasing refractive error and photophobia. Outline the workup and management. | 5+5   |
| 7.  | a) Etiopathogenesis of lid changes in trachoma.<br>b) Management outline of stage 2 trachoma.   | 6+4   |
| 8.  | Sjogren Syndrome – Clinical features, diagnosis and management  | 3+3+4 |
| 9.  | a) Clinical features and diagnostic tests of ocular myasthenia.<br>b) Important differential diagnosis and points to differentiate.   | 6+4   |
| 10. | a) Pathogenesis of senile ectropion.<br>b) Elucidate tests for assessment and management of senile ectropion.   | 5+5   |

\*\*\*\*\*



**OPHTHALMOLOGY**

## PAPER-III

TIME: 3 HOURS  
MAX. MARKS: 100

OPH/J/18/26/III

**IMPORTANT INSTRUCTIONS**

- This question paper consists of 10 questions divided into Part “A” and part “B”, each part containing 5 questions.
- Answers to questions of part A and part B are to be strictly attempted in separate answer sheet(s) and the main + supplementary answer sheet(s) used for each part must be tagged separately.
- Answers to question(s) of Part A attempted in answer sheet(s) of part B or Vice versa shall not be evaluated.
- Answer sheets of Part A and Part B are not to be tagged together.
- Part A and Part B should be mentioned only on the covering page of the respective answer sheets.
- Attempt all questions in order.
- Each question carries 10 marks.
- Read the question carefully and answer to the point neatly and legibly.
- Do not leave any blank pages between two answers.
- Indicate the question number correctly for the answer in the margin space.
- Answer all the parts of a single question together.
- Start the answer to a question on a fresh page or leave adequate space between two answers.
- Draw table/diagrams/flowcharts wherever appropriate.

Write short notes on:

**PART A**

- |   |       |
|---|-------|
| 1. Clinical features and management of 3 <sup>rd</sup> nerve palsy.       | 10    |
| 2. a) Uses of Mitomycin C in Ophthalmology<br>b) Mention its side effects | 8+2   |
| 3. Ischemic optic neuropathy – diagnosis and management.                  | 5+5   |
| 4. Criteria for early glaucomatous visual field changes.                  | 10    |
| 5. Macular hole – Its causes, grading and management.                     | 3+3+4 |

**OPHTHALMOLOGY****PAPER-III****Please read carefully the important instructions mentioned on Page '1'**

- Answers to questions of Part A and part B are to be strictly attempted in separate answer sheets and the main + supplementary answer sheets used for each part must be tagged separately.
- Answers to question(s) of Part A attempted in answer sheets of Part B or vice versa shall not be evaluated.

**PART B**

- |     |   |         |
|-----|---|---------|
| 6.  | Keratoprosthesis:   | 8+2     |
|     | a) Types  |         |
|     | b) Indications  |         |
| 7.  | a) Clinical features of early and late branch retinal vein occlusion.                 | 5+5     |
|     | b) Results of important trials in management of BRVO.                                 |         |
| 8.  | a) Surgical spaces of orbit.  | 4+(3+3) |
|     | b) Discuss different approaches to orbitotomy and management of unilateral proptosis. |         |
| 9.  | a) Types of multifocal IOLs   | 5+5     |
|     | b) Case selection and basic principles for premium IOLs.                              |         |
| 10. | a) Causes of hyperfluorescence and blocked fluorescence in Fluorescein angiography.   | 5+5     |
|     | b) Fluorescein angiographic features in CSR.  |         |

\*\*\*\*\*

**OPHTHALMOLOGY**

## PAPER-IV

TIME: 3 HOURS  
MAX. MARKS: 100

OPH/J/18/26/IV

**IMPORTANT INSTRUCTIONS**

- This question paper consists of 10 questions divided into Part “A” and part “B”, each part containing 5 questions.
- Answers to questions of part A and part B are to be strictly attempted in separate answer sheet(s) and the main + supplementary answer sheet(s) used for each part must be tagged separately.
- Answers to question(s) of Part A attempted in answer sheet(s) of part B or Vice versa shall not be evaluated.
- Answer sheets of Part A and Part B are not to be tagged together.
- Part A and Part B should be mentioned only on the covering page of the respective answer sheets.
- Attempt all questions in order.
- Each question carries 10 marks.
- Read the question carefully and answer to the point neatly and legibly.
- Do not leave any blank pages between two answers.
- Indicate the question number correctly for the answer in the margin space.
- Answer all the parts of a single question together.
- Start the answer to a question on a fresh page or leave adequate space between two answers.
- Draw table/diagrams/flowcharts wherever appropriate.

Write short notes on:

**PART A**

- |   |     |
|---|-----|
| 1. a) Role of Botulinum toxin in strabismus.                    | 6+4 |
| b) What is Faden operation?                                     |     |
| 2. Recent advances in the endothelial keratoplasty.             | 10  |
| 3. Newer advances in refractive surgery.                        | 10  |
| 4. Principles of MRI and its role in practice of Ophthalmology. | 4+6 |
| 5. a) “Progressive Glasses” design.                             | 6+4 |
| b) When to use it and its advantages over conventional glasses? |     |

**OPHTHALMOLOGY**

## PAPER-IV

**Please read carefully the important instructions mentioned on Page '1'**

- Answers to questions of Part A and part B are to be strictly attempted in separate answer sheets and the main + supplementary answer sheets used for each part must be tagged separately.
- Answers to question(s) of Part A attempted in answer sheets of Part B or vice versa shall not be evaluated.

**PART B**

- |     |   |     |
|-----|---|-----|
| 6.  | a) Intravitreal implants and indications for their use.   | 7+3 |
|     | b) What are their possible side effects?  |     |
| 7.  | a) Management of recurrent viral keratitis.   | 5+5 |
|     | b) Discuss two newer imaging modalities of anterior segment of eye.   |     |
| 8.  | Management of unilateral cataract in a 2-year-old child.  | 10  |
| 9.  | a) Management of unilateral 5-day old chemical burn.  | 5+5 |
|     | b) Newer concepts in the management of ocular burns.  |     |
| 10. | Newer advances in the management of 2 DD unilateral retinoblastoma in the presenting eye and when presenting in the fellow eye in bilateral retinoblastoma. | 5+5 |

\*\*\*\*\*

**OPHTHALMOLOGY**  
**PAPER-I**TIME: 3 HOURS  
MAX. MARKS: 100

OPH/D/19/26/I

**IMPORTANT INSTRUCTIONS**

- This question paper consists of 10 questions divided into Part "A" and part "B", each part containing 5 questions.
- Answers to questions of part A and part B are to be strictly attempted in separate answer sheet(s) and the main + supplementary answer sheet(s) used for each part must be tagged separately.
- Answers to question(s) of Part A attempted in answer sheet(s) of part B or Vice versa shall not be evaluated.
- Answer sheets of Part A and Part B are not to be tagged together.
- Part A and Part B should be mentioned only on the covering page of the respective answer sheets.
- Attempt all questions in order.
- Each question carries 10 marks.
- Read the question carefully and answer to the point neatly and legibly.
- Do not leave any blank pages between two answers.
- Indicate the question number correctly for the answer in the margin space.
- Answer all the parts of a single question together.
- Start the answer to a question on a fresh page or leave adequate space between two answers.
- Draw table/diagrams/flowcharts wherever appropriate.

**Write Short notes on:****PART A**

- |    |  |       |
|----|--|-------|
| 1. | a) Metabolism of human crystalline lens.   | 5+5   |
|    | b) Biochemical factors responsible for cataract.   |       |
| 2. | a) Parameters involved in fluid dynamics in Phacoemulsification.                                   | 5+5   |
|    | b) Differences, advantages and disadvantages of Peristaltic versus Venturi pump.                   |       |
| 3. | a) Explain the optics of Scleral Contact Lens and RGP Contact Lens.                                | 5+5   |
|    | b) Contact lenses for Keratoconus.   |       |
| 4. | Describe the methods, risks and benefits of tumour biopsy for intraocular and extraocular tumours. | 5+2+3 |
| 5. | a) Drug delivery systems utilized in Ophthalmology.  | 5+5   |
|    | b) Antimetabolites used in Ophthalmology.  |       |

**P.T.O**



**OPHTHALMOLOGY**  
**PAPER-I**

**Please read carefully the important instructions mentioned on Page '1'**

- Answers to questions of Part A and part B are to be strictly attempted in separate answer sheets and the main + supplementary answer sheets used for each part must be tagged separately.
- Answers to question(s) of Part A attempted in answer sheets of Part B or vice versa shall not be evaluated.

**PART B**

- |     |  |         |
|-----|--|---------|
| 6.  | a) Blood Aqueous Barrier and Blood Brain Barrier.  | 6+4     |
|     | b) Clinical implications of both of these barriers.  |         |
| 7.  | a) Principle of Goldmann Applanation Tonometry.  | 5+5     |
|     | b) Corneal Hysteresis.   |         |
| 8.  | a) Retinoscopy - types & technique.  | 1+3+3+3 |
|     | b) Subjective correction (prescription of glasses) in patients aged 15 years and 50 years. |         |
| 9.  | a) Calculation of IOL power in children.   | 5+5     |
|     | b) Selection of IOL in children  |         |
| 10. | a) Pupillary pathway.  | 5+5     |
|     | b) Pathway for accommodation.  |         |

\*\*\*\*\*

FINAL EXAM  
DECEMBER 2019

NATIONAL BOARD OF EXAMINATIONS

**OPHTHALMOLOGY**  
**PAPER-II**

TIME: 3 HOURS  
MAX. MARKS: 100

OPH/D/19/26/II

**IMPORTANT INSTRUCTIONS**

- This question paper consists of 10 questions divided into Part "A" and part "B", each part containing 5 questions.
- Answers to questions of part A and part B are to be strictly attempted in separate answer sheet(s) and the main + supplementary answer sheet(s) used for each part must be tagged separately.
- Answers to question(s) of Part A attempted in answer sheet(s) of part B or Vice versa shall not be evaluated.
- Answer sheets of Part A and Part B are not to be tagged together.
- Part A and Part B should be mentioned only on the covering page of the respective answer sheets.
- Attempt all questions in order.
- Each question carries 10 marks.
- Read the question carefully and answer to the point neatly and legibly.
- Do not leave any blank pages between two answers.
- Indicate the question number correctly for the answer in the margin space.
- Answer all the parts of a single question together.
- Start the answer to a question on a fresh page or leave adequate space between two answers.
- Draw table/diagrams/flowcharts wherever appropriate.

**Write Short notes on:**

**PART A**

- |   |         |
|---|---------|
| 1. Describe the clinical features, evaluation and management of microsporidial keratitis.                         | 3+3+4   |
| 2. Risk factors, classification and management of Retinopathy of Prematurity (ROP).                               | 2+3+5   |
| 3. Describe the clinical features, evaluation and management of idiopathic intracranial hypertension.             | 3+3+4   |
| 4. Describe the clinical features, evaluation, syndromic association and management of congenital ptosis.         | 2+2+2+4 |
| 5. Describe the clinical features, evaluation and management of ocular manifestations of Steven Johnson Syndrome. | 3+3+4   |

**P.T.O**

**OPHTHALMOLOGY**  
**PAPER-II****Please read carefully the important instructions mentioned on Page '1'**

- Answers to questions of Part A and part B are to be strictly attempted in separate answer sheets and the main + supplementary answer sheets used for each part must be tagged separately.
- Answers to question(s) of Part A attempted in answer sheets of Part B or vice versa shall not be evaluated.

**PART B**

- |     |   |         |
|-----|---|---------|
| 6.  | Describe the clinical features, evaluation, differential diagnosis and management of Pigment Dispersion Syndrome.                               | 2+2+3+3 |
| 7.  | a) Cavernous sinus syndrome - clinical presentation & management.<br>b) Superior orbital fissure syndrome - clinical presentation & management. | 5+5     |
| 8.  | a) Differential diagnosis of White dot syndromes.<br>b) Clinical features, evaluation and management of Serpiginous Choroidopathy.              | 3+7     |
| 9.  | a) Approach to headaches related to Ophthalmology.<br>b) Approach to a case of amaurosis fugax.   | 5+5     |
| 10. | Juvenile Idiopathic Arthritis – Ocular manifestations and management.   | 4+6     |

\*\*\*\*\*

**OPHTHALMOLOGY**  
**PAPER-III**TIME: 3 HOURS  
MAX. MARKS: 100

OPH/D/19/26/III

**IMPORTANT INSTRUCTIONS**

- This question paper consists of 10 questions divided into Part "A" and part "B", each part containing 5 questions.
- Answers to questions of part A and part B are to be strictly attempted in separate answer sheet(s) and the main + supplementary answer sheet(s) used for each part must be tagged separately.
- Answers to question(s) of Part A attempted in answer sheet(s) of part B or Vice versa shall not be evaluated.
- Answer sheets of Part A and Part B are not to be tagged together.
- Part A and Part B should be mentioned only on the covering page of the respective answer sheets.
- Attempt all questions in order.
- Each question carries 10 marks.
- Read the question carefully and answer to the point neatly and legibly.
- Do not leave any blank pages between two answers.
- Indicate the question number correctly for the answer in the margin space.
- Answer all the parts of a single question together.
- Start the answer to a question on a fresh page or leave adequate space between two answers.
- Draw table/diagrams/flowcharts wherever appropriate.

**Write Short notes on:****PART A**

- |    |  |         |
|----|--|---------|
| 1. | Sterilization techniques - Ophthalmic operation theatre, surgical instruments and logistics.   | 4+3+3   |
| 2. | a) Describe the inheritance pattern and clinical features of corneal stromal dystrophies.<br>b) Discuss about merits and demerits of endothelial keratoplasty. | 5+5     |
| 3. | Classification, clinical features, diagnosis and management of choroidal melanoma.   | 2+2+3+3 |
| 4. | a) Phacomatoses – Definition, types & ocular manifestations.<br>b) Management of ocular manifestations of neurofibromatosis.                                   | 6+4     |
| 5. | a) Investigations and management of cluster endophthalmitis.<br>b) Differences between TASS and endophthalmitis.   | 6+4     |

P.T.O

**OPHTHALMOLOGY**  
**PAPER-III****Please read carefully the important instructions mentioned on Page '1'**

- Answers to questions of Part A and part B are to be strictly attempted in separate answer sheets and the main + supplementary answer sheets used for each part must be tagged separately.
- Answers to question(s) of Part A attempted in answer sheets of Part B or vice versa shall not be evaluated.

**PART B**

- |     |   |       |
|-----|---|-------|
| 6.  | Describe typical and atypical clinical features, evaluation and management of arteritic AION (anterior ischemic optic neuropathy).                                      | 3+3+4 |
| 7.  | Describe the clinical features, evaluation and management of infantile esotropia.   | 3+4+3 |
| 8.  | a) Nystagmus - Definition and types/classification.<br>b) Approach & examination of a case of congenital nystagmus.<br>c) Surgical options for management of nystagmus. | 3+4+3 |
| 9.  | a) Pathophysiology, evaluation and management of full thickness macular hole.<br>b) Factors prognosticating the treatment outcome.                                      | 7+3   |
| 10. | Botulinum Toxin use in Ophthalmology – Mechanism of action, indications and complications.  | 2+4+4 |

\*\*\*\*\*



FINAL EXAM  
DECEMBER 2019

NATIONAL BOARD OF EXAMINATIONS

**OPHTHALMOLOGY**  
**PAPER-IV**

TIME: 3 HOURS  
MAX. MARKS: 100

OPH/D/19/26/IV

**IMPORTANT INSTRUCTIONS**

- This question paper consists of 10 questions divided into Part "A" and part "B", each part containing 5 questions.
- Answers to questions of part A and part B are to be strictly attempted in separate answer sheet(s) and the main + supplementary answer sheet(s) used for each part must be tagged separately.
- Answers to question(s) of Part A attempted in answer sheet(s) of part B or Vice versa shall not be evaluated.
- Answer sheets of Part A and Part B are not to be tagged together.
- Part A and Part B should be mentioned only on the covering page of the respective answer sheets.
- Attempt all questions in order.
- Each question carries 10 marks.
- Read the question carefully and answer to the point neatly and legibly.
- Do not leave any blank pages between two answers.
- Indicate the question number correctly for the answer in the margin space.
- Answer all the parts of a single question together.
- Start the answer to a question on a fresh page or leave adequate space between two answers.
- Draw table/diagrams/flowcharts wherever appropriate.

**Write Short notes on:**

**PART A**

- |    |   |       |
|----|---|-------|
| 1. | Corneal Crosslinking – Principles, indications & different protocols.   | 3+3+4 |
| 2. | a) Newer microsurgical devices for management of glaucoma.<br>b) Discuss Tube versus Trabeculectomy study.  | 5+5   |
| 3. | a) SMILE – Indications, intraoperative & postoperative complications and their management.<br>b) Phakic IOLs – Types, indications, intraoperative & postoperative complications and their management. | 5+5   |
| 4. | OCTA - Principle and clinical applications.   | 5+5   |
| 5. | Tele-ophthalmology – role and application/set up.   | 2+8   |

**P.T.O**

**OPHTHALMOLOGY**  
**PAPER-IV****Please read carefully the important instructions mentioned on Page '1'**

- Answers to questions of Part A and part B are to be strictly attempted in separate answer sheets and the main + supplementary answer sheets used for each part must be tagged separately.
- Answers to question(s) of Part A attempted in answer sheets of Part B or vice versa shall not be evaluated.

**PART B**

- |     |   |       |
|-----|---|-------|
| 6.  | a) Define dry eyes as per DEWS 2 report.<br>b) Role of anti-inflammatory agents in management of dry eyes.<br>c) Diagnosis and management of Meibomian gland disease. | 3+2+5 |
| 7.  | a) Visual prosthesis.<br>b) Keratoprosthesis.   | 5+5   |
| 8.  | a) Ocular surface reconstruction.<br>b) SLET - Indications, intraoperative & postoperative complications and their management.  | 4+6   |
| 9.  | a) Bevacizumab – Mechanism of action, indications and differences with other drugs of same group.<br>b) Discuss in brief CATT 1 and CATT 2 trials.                    | 6+4   |
| 10. | Enumerate and describe role of biomarkers which may be beneficial in diagnosis, pathogenesis, treatment strategies and prevention of various ocular morbidities.      | 10    |

\*\*\*\*\*

**OPHTHALMOLOGY**  
**PAPER-I**TIME: 3 HOURS  
MAX. MARKS: 100

OPH/J/19/26/I

**IMPORTANT INSTRUCTIONS**

- This question paper consists of 10 questions divided into Part "A" and part "B", each part containing 5 questions.
- Answers to questions of part A and part B are to be strictly attempted in separate answer sheet(s) and the main + supplementary answer sheet(s) used for each part must be tagged separately.
- Answers to question(s) of Part A attempted in answer sheet(s) of part B or Vice versa shall not be evaluated.
- Answer sheets of Part A and Part B are not to be tagged together.
- Part A and Part B should be mentioned only on the covering page of the respective answer sheets.
- Attempt all questions in order.
- Each question carries 10 marks.
- Read the question carefully and answer to the point neatly and legibly.
- Do not leave any blank pages between two answers.
- Indicate the question number correctly for the answer in the margin space.
- Answer all the parts of a single question together.
- Start the answer to a question on a fresh page or leave adequate space between two answers.
- Draw table/diagrams/flowcharts wherever appropriate.

**Write Short notes on:****PART A**

- |   |       |
|---|-------|
| 1. a) Anatomy and blood supply of retina.   | 4+4+2 |
| b) Anatomy and histology of macula.   |       |
| c) Enumerate macular function test.   |       |
| 2. a) Mechanism of corneal transparency.  | 5+5   |
| b) Pharmacotherapy of alkali corneal injury.  |       |
| 3. a) Enumerate the microbiological techniques available to diagnose and identify the cause of intraocular infection. | 5+5   |
| b) Discuss the advantages and disadvantages of each technique.  |       |
| 4. a) Classify pharmacological agents available to treat glaucoma.  | 4+3+3 |
| b) Mechanism of action of topical agents.   |       |
| c) Adverse effects and contraindications of systemic agents.  |       |
| 5. a) Enumerate various types of LASERs used in ophthalmic practice.  | 2+6+2 |
| b) Uses of LASERs in ocular disorders.  |       |
| c) Safety precautions in LASER delivery.  |       |

**P.T.O.**

**OPHTHALMOLOGY**  
**PAPER-I****Please read carefully the important instructions mentioned on Page '1'**

- Answers to questions of Part A and part B are to be strictly attempted in separate answer sheets and the main + supplementary answer sheets used for each part must be tagged separately.
- Answers to question(s) of Part A attempted in answer sheets of Part B or vice versa shall not be evaluated.

**PART B**

6. a) Visual pathway and its blood supply. 5+5  
b) Anatomy of lateral geniculate body and visual cortex.
7. a) Development of the lens. 3+2+5  
b) Enumerate congenital abnormalities of lens.  
c) Factors contributing to genesis of cataract.
8. a) Supranuclear control of ocular movements. 5+2+3  
b) Grades of binocular vision.  
c) Tests for evaluation of binocular vision.
9. a) Genetics of retinoblastoma. 5+5  
b) Histopathology of retinoblastoma.
10. a) Role of immunosuppressive drugs in ocular disorders. 5+5  
b) Gene therapy.

\*\*\*\*\*

**OPHTHALMOLOGY**  
**PAPER-II**TIME: 3 HOURS  
MAX. MARKS: 100

OPH/J/19/26/II

**IMPORTANT INSTRUCTIONS**

- This question paper consists of 10 questions divided into Part “A” and part “B”, each part containing 5 questions.
- Answers to questions of part A and part B are to be strictly attempted in separate answer sheet(s) and the main + supplementary answer sheet(s) used for each part must be tagged separately.
- Answers to question(s) of Part A attempted in answer sheet(s) of part B or Vice versa shall not be evaluated.
- Answer sheets of Part A and Part B are not to be tagged together.
- Part A and Part B should be mentioned only on the covering page of the respective answer sheets.
- Attempt all questions in order.
- Each question carries 10 marks.
- Read the question carefully and answer to the point neatly and legibly.
- Do not leave any blank pages between two answers.
- Indicate the question number correctly for the answer in the margin space.
- Answer all the parts of a single question together.
- Start the answer to a question on a fresh page or leave adequate space between two answers.
- Draw table/diagrams/flowcharts wherever appropriate.

**Write short notes on:****PART A**

1. Clinical features and management of adenoviral keratoconjunctivitis. 5+5
2. A 30-year-old male reports with acute onset unilateral red eye and diminished vision of three days duration with watery discharge, a corneal epithelial lesion, stromal infiltration and an immune ring on the endothelium. He gives a history of previous episodes of red eye in the same eye and has lesions suggestive of previous corneal disease. Make a flowchart describing how you would arrive at a diagnosis and how you would manage the case. 5+5
3. a) Classify esotropia. 2+4+4  
b) How would you plan the management of convergence excess esotropia in a 5-year-old child?  
c) Describe the choice of procedure and surgical planning in detail.
4. A patient with chronic angle closure glaucoma undergoes a trabeculectomy and has a shallow anterior chamber on the first postoperative day. Describe the process by which you would discern the cause of postoperative anterior chamber shallowing and how you would manage this situation. 5+5
5. Ocular management of a 50-year-old diabetic patient including medical, surgical and Laser treatment who has 3/60 vision and proliferative diabetic retinopathy in both eyes. 10

**P.T.O.**



**OPHTHALMOLOGY**  
**PAPER-II****Please read carefully the important instructions mentioned on Page '1'**

- Answers to questions of Part A and part B are to be strictly attempted in separate answer sheets and the main + supplementary answer sheets used for each part must be tagged separately.
- Answers to question(s) of Part A attempted in answer sheets of Part B or vice versa shall not be evaluated.

**PART B**

6. A 10-year-old child with complaints of blurring of vision and whitish opacities in both eyes is brought to OPD. Discuss differential diagnosis and management of this case. 5+5
7. a) Clinical features and differential diagnosis of various types of retinal detachment. 6+4  
b) Management of giant retinal tear.
8. A 6-year-old child is brought to the OPD by her parents with complaints of drooping of the left upper lid noticed three years ago. How would you evaluate this patient and decide on your course of management? 5+5
9. Enumerate the various ocular manifestations of Hansen's disease. Discuss management of Lagophthalmos. 4+6
10. a) Neurofibromatosis-ocular manifestations. 5+5  
b) Differential diagnosis of optic nerve glioma.

\*\*\*\*\*

**OPHTHALMOLOGY**  
**PAPER-III**TIME: 3 HOURS  
MAX. MARKS: 100

OPH/J/19/26/III

**IMPORTANT INSTRUCTIONS**

- This question paper consists of 10 questions divided into Part "A" and part "B", each part containing 5 questions.
- Answers to questions of part A and part B are to be strictly attempted in separate answer sheet(s) and the main + supplementary answer sheet(s) used for each part must be tagged separately.
- Answers to question(s) of Part A attempted in answer sheet(s) of part B or Vice versa shall not be evaluated.
- Answer sheets of Part A and Part B are not to be tagged together.
- Part A and Part B should be mentioned only on the covering page of the respective answer sheets.
- Attempt all questions in order.
- Each question carries 10 marks.
- Read the question carefully and answer to the point neatly and legibly.
- Do not leave any blank pages between two answers.
- Indicate the question number correctly for the answer in the margin space.
- Answer all the parts of a single question together.
- Start the answer to a question on a fresh page or leave adequate space between two answers.
- Draw table/diagrams/flowcharts wherever appropriate.

**Write Short notes on:****PART A**

1. A 70-year-old male with a normal phakic contralateral eye had posterior capsular tear in the centre during a phacoemulsification procedure after removal of the cortex. Make a flowchart describing your subsequent actions, explaining why you performed each step. 10
2. a) Enumerate the various consequences of a closed globe injury by a blunt object. 6+4  
b) How would you distinguish between open globe and closed globe injury?
3. A 21-year-old myopic male presented with a total retinal detachment in the right eye, a single causative break at 11 o'clock anterior to the equator and no PVR. 5+5  
a) What are the surgical options for management of retinal detachment?  
b) Explain clearly why you would recommend your chosen surgical option and outline the surgical steps.
4. a) Enumerate various implant drainage devices in glaucoma surgery. 4+6  
b) Indications and adverse effects of Ahmed Glaucoma Valve surgery.
5. a) Enumerate Kerato refractive surgeries. 4+(3+3)  
b) Intraoperative and postoperative complications of LASIK and their management.

**P.T.O**

**OPHTHALMOLOGY**  
**PAPER-III****Please read carefully the important instructions mentioned on Page '1'**

- Answers to questions of Part A and part B are to be strictly attempted in separate answer sheets and the main + supplementary answer sheets used for each part must be tagged separately.
- Answers to question(s) of Part A attempted in answer sheets of Part B or vice versa shall not be evaluated.

**PART B**

- |     |  |     |
|-----|--|-----|
| 6.  | After giving one ml of a peribulbar anaesthetic, there is sudden proptosis, pain, sub-conjunctival hemorrhage, severe chemosis and loss of vision with loss of all ocular movements and inability to close the eyelids.<br>a) Describe what your further course of action would be.<br>b) What are the signs of globe perforation during peribulbar block? | 5+5 |
| 7.  | What are the surgical options in the management of a blowout fracture of the orbit? Discuss the indications for each.  | 5+5 |
| 8.  | a) Enumerate various types of lamellar keratoplasty.<br>b) How would you decide which lamellar procedure would be appropriate for a patient?   | 5+5 |
| 9.  | Management options in a case of lateral rectus palsy with visually disabling diplopia.   | 10  |
| 10. | a) Describe techniques for repair of a canalicular injury.<br>b) Describe types of Orbital Implants and their advantages.  | 5+5 |

\*\*\*\*\*

**OPHTHALMOLOGY**  
**PAPER-IV**TIME: 3 HOURS  
MAX. MARKS: 100

OPH/J/19/26/IV

**IMPORTANT INSTRUCTIONS**

- This question paper consists of 10 questions divided into Part "A" and part "B", each part containing 5 questions.
- Answers to questions of part A and part B are to be strictly attempted in separate answer sheet(s) and the main + supplementary answer sheet(s) used for each part must be tagged separately.
- Answers to question(s) of Part A attempted in answer sheet(s) of part B or Vice versa shall not be evaluated.
- Answer sheets of Part A and Part B are not to be tagged together.
- Part A and Part B should be mentioned only on the covering page of the respective answer sheets.
- Attempt all questions in order.
- Each question carries 10 marks.
- Read the question carefully and answer to the point neatly and legibly.
- Do not leave any blank pages between two answers.
- Indicate the question number correctly for the answer in the margin space.
- Answer all the parts of a single question together.
- Start the answer to a question on a fresh page or leave adequate space between two answers.
- Draw table/diagrams/flowcharts wherever appropriate.

**Write Short notes on:****PART A**

1. An 80-year-old retired school teacher with parkinsonism and modest visual demands was operated for cataract in the right eye and she has a postoperative error of +5 diopter in the first week. Her contralateral eye is pseudophakic and has good uncorrected postoperative vision with which she is satisfied. The current surgery was uncomplicated. 5+5
  - a) Discuss various options for further management of the patient.
  - b) How would you decide on the best course of action?
2. Discuss the newly available options for the management of Limbal stem cell deficiency. 10
3. a) Principles of Femto Assisted Cataract Surgery (FACS). 5+5  
b) Advantages and disadvantages of FACS.
4. Role of biological agents in management of patient with bilateral chronic uveitis. 10
5. a) Describe newly available modalities for imaging of the anterior segment? 5+5  
b) Management of a painful blind eye with medically uncontrollable intraocular pressure of 50 mm Hg.

**P.T.O.**

**OPHTHALMOLOGY**  
**PAPER-IV****Please read carefully the important instructions mentioned on Page '1'**

- Answers to questions of Part A and part B are to be strictly attempted in separate answer sheets and the main + supplementary answer sheets used for each part must be tagged separately.
- Answers to question(s) of Part A attempted in answer sheets of Part B or vice versa shall not be evaluated.

**PART B**

- |   |     |
|---|-----|
| 6. Describe management options for a 60-year old patient suffering from age related macular degeneration with visual acuity of 3/60 in both eyes. Discuss options for visual rehabilitation of patient. | 5+5 |
| 7. What are the current management options available for a case of chronic central serous chorioretinopathy?  | 10  |
| 8. Recent advances in management of postoperative astigmatism.  | 10  |
| 9. What are the surgical options for management of presbyopia?  | 10  |
| 10. a) Intra-arterial chemotherapy for retinoblastoma.<br>b) Uses of botulinum toxin in the eye.  | 5+5 |

\*\*\*\*\*

**OPHTHALMOLOGY****PAPER-I**

TIME: 3 HOURS

OPH/D/20/26/I

MAX. MARKS: 100

**IMPORTANT INSTRUCTIONS**

- **You are provided with 5 answer sheet booklets. Each individual answer sheet booklet consists of 10 pages excluding the covering jackets.**
- **This question paper consists of 10 short note questions. Question paper is divided into 5 Parts - A, B, C, D and E, each part containing 2 questions.**
- **Answers to questions of part A, part B, part C, part D & part E are to be strictly attempted in a separate answer sheet booklet which must be later tagged together at the end of the exam.**
- **No additional supplementary answer sheet booklet will be provided.**
- **Answers to question(s) attempted on an answer sheet booklet for a different part will not be evaluated.**
- **Part A/Part B /Part C/Part D/Part E should be mentioned on the covering page of the respective answer sheet booklet.**
- Attempt all questions in order.
- Each question carries 10 marks.
- Read the question carefully and answer to the point neatly and legibly.
- Do not leave any blank pages between two answers.
- Indicate the question number correctly for the answer in the margin space.
- Answer all the parts of a single question together.
- Start the answer to a question on a fresh page or leave adequate space between two answers.
- Draw table/diagrams/flowcharts wherever appropriate.



**OPHTHALMOLOGY****PAPER-I****PART - A**

TIME: 3 HOURS

OPH/D/20/26/I

MAX. MARKS: 100

**IMPORTANT INSTRUCTIONS**

- **Answers to questions of part A, part B, part C, part D & part E are to be strictly attempted in a separate answer sheet booklet which must be later tagged together at the end of the exam.**
- **No additional supplementary answer sheet booklet will be provided.**
- **Answers to question(s) attempted on an answer sheet booklet for a different part will not be evaluated.**
- **Part A/Part B /Part C/Part D/Part E should be mentioned on the covering page of the respective answer sheet booklet.**

**Write short notes on:****PART- A**

1. a) Anatomy of retractors of eyelid and its clinical importance. 5+3+2  
b) Development of lacrimal drainage system.  
c) Mechanism of lacrimal pump.
2. a) Anatomy of angle of anterior chamber. 4+6  
b) Principle of gonioscopy and various types of gonioscopes.

**OPHTHALMOLOGY****PAPER-I****PART - B**

TIME: 3 HOURS

OPH/D/20/26/I

MAX. MARKS: 100

**IMPORTANT INSTRUCTIONS**

- **Answers to questions of part A, part B, part C, part D & part E are to be strictly attempted in a separate answer sheet booklet which must be later tagged together at the end of the exam.**
- **No additional supplementary answer sheet booklet will be provided.**
- **Answers to question(s) attempted on an answer sheet booklet for a different part will not be evaluated.**
- **Part A/Part B /Part C/Part D/Part E should be mentioned on the covering page of the respective answer sheet booklet.**

**Write short notes on:****PART- B**

3. a) What are the various materials used for spectacle lenses and types of coatings given? 5+5  
b) Discuss progressive and bifocal lens design of spectacle lenses and advantages and disadvantages of each design.
4. a) Draw a labelled diagram of pupillary reflex pathway. 5+5  
b) Discuss approach to diagnosis of anisocoria.

**OPHTHALMOLOGY****PAPER-I****PART - C**

TIME: 3 HOURS

OPH/D/20/26/I

MAX. MARKS: 100

**IMPORTANT INSTRUCTIONS**

- **Answers to questions of part A, part B, part C, part D & part E are to be strictly attempted in a separate answer sheet booklet which must be later tagged together at the end of the exam.**
- **No additional supplementary answer sheet booklet will be provided.**
- **Answers to question(s) attempted on an answer sheet booklet for a different part will not be evaluated.**
- **Part A/Part B /Part C/Part D/Part E should be mentioned on the covering page of the respective answer sheet booklet.**

**Write short notes on:****PART- C**

5. a) Describe aqueous humor dynamics. 5+5  
b) Pharmacokinetic of drugs which increase uveoscleral outflow.
6. a) Draw a neat, labeled diagram showing structures passing through the superior orbital fissure. 4+(3+3)  
b) Describe clinical features and management in a case of orbital cellulitis.

**OPHTHALMOLOGY****PAPER-I****PART - D**

TIME: 3 HOURS

OPH/D/20/26/I

MAX. MARKS: 100

**IMPORTANT INSTRUCTIONS**

- Answers to questions of part A, part B, part C, part D & part E are to be strictly attempted in a separate answer sheet booklet which must be later tagged together at the end of the exam.
- No additional supplementary answer sheet booklet will be provided.
- Answers to question(s) attempted on an answer sheet booklet for a different part will not be evaluated.
- Part A/Part B /Part C/Part D/Part E should be mentioned on the covering page of the respective answer sheet booklet.

Write short notes on:

**PART- D**

7. a) What are the types of prospective study and its advantages? 6+4  
b) Methods to avoid bias in a study.
8. a) What is Near point and Range of accommodation of 4D of Myope 5+3+2  
with amplitude of 8?  
b) Tests to determine AC/A ratio.  
c) Convergence insufficiency.

**OPHTHALMOLOGY****PAPER-I****PART - E**

TIME: 3 HOURS

OPH/D/20/26/I

MAX. MARKS: 100

**IMPORTANT INSTRUCTIONS**

- **Answers to questions of part A, part B, part C, part D & part E are to be strictly attempted in a separate answer sheet booklet which must be later tagged together at the end of the exam.**
- **No additional supplementary answer sheet booklet will be provided.**
- **Answers to question(s) attempted on an answer sheet booklet for a different part will not be evaluated.**
- **Part A/Part B /Part C/Part D/Part E should be mentioned on the covering page of the respective answer sheet booklet.**

**Write short notes on:****PART- E**

9. a) Describe the surgical anatomy of pars plana. 3+3+4  
b) Enumerate the indications of pars plana vitrectomy.  
c) Discuss indications and dose of various pharmacological agents used through intravitreal route.
10. a) Discuss the mechanism of action of local anaesthetic agents used in Ophthalmology. What are the various routes of administration? 6+4  
b) What are the complications of peri-bulbar anaesthesia?

**OPHTHALMOLOGY****PAPER-II**

TIME: 3 HOURS

OPH/D/20/26/II

MAX. MARKS: 100

**IMPORTANT INSTRUCTIONS**

- You are provided with 5 answer sheet booklets. Each individual answer sheet booklet consists of 10 pages excluding the covering jackets.
- This question paper consists of 10 short note questions. Question paper is divided into 5 Parts - A, B, C, D and E, each part containing 2 questions.
- Answers to questions of part A, part B, part C, part D & part E are to be strictly attempted in a separate answer sheet booklet which must be later tagged together at the end of the exam.
- No additional supplementary answer sheet booklet will be provided.
- Answers to question(s) attempted on an answer sheet booklet for a different part will not be evaluated.
- Part A/Part B /Part C/Part D/Part E should be mentioned on the covering page of the respective answer sheet booklet.
- Attempt all questions in order.
- Each question carries 10 marks.
- Read the question carefully and answer to the point neatly and legibly.
- Do not leave any blank pages between two answers.
- Indicate the question number correctly for the answer in the margin space.
- Answer all the parts of a single question together.
- Start the answer to a question on a fresh page or leave adequate space between two answers.
- Draw table/diagrams/flowcharts wherever appropriate.



**OPHTHALMOLOGY****PAPER-II****PART- A**

TIME: 3 HOURS

OPH/D/20/26/II

MAX. MARKS: 100

**IMPORTANT INSTRUCTIONS**

- Answers to questions of part A, part B, part C, part D & part E are to be strictly attempted in a separate answer sheet booklet which must be later tagged together at the end of the exam.
- No additional supplementary answer sheet booklet will be provided.
- Answers to question(s) attempted on an answer sheet booklet for a different part will not be evaluated.
- Part A/Part B /Part C/Part D/Part E should be mentioned on the covering page of the respective answer sheet booklet.

**Write short notes on:****PART A**

1. What are the causes of subluxated lens/cataract? How do you manage such case? 5+5
2. Describe the healing of epithelial defect. Enumerate causes of persistent epithelial defect? How will you manage such a case of persistent epithelial defect? 4+3+3

**OPHTHALMOLOGY****PAPER-II****PART- B**

TIME: 3 HOURS

OPH/D/20/26/II

MAX. MARKS: 100

**IMPORTANT INSTRUCTIONS**

- Answers to questions of part A, part B, part C, part D & part E are to be strictly attempted in a separate answer sheet booklet which must be later tagged together at the end of the exam.
- No additional supplementary answer sheet booklet will be provided.
- Answers to question(s) attempted on an answer sheet booklet for a different part will not be evaluated.
- Part A/Part B /Part C/Part D/Part E should be mentioned on the covering page of the respective answer sheet booklet.

Write short notes on:

**PART B**

3. Ocular hypertension – Clinical features, evaluation and management. 3+3+4
4. Give the morphological classification of contracted socket. 5+5  
Discuss the strategies of management for a contracted socket.

**OPHTHALMOLOGY****PAPER-II****PART - C**

TIME: 3 HOURS

OPH/D/20/26/II

MAX. MARKS: 100

**IMPORTANT INSTRUCTIONS**

- Answers to questions of part A, part B, part C, part D & part E are to be strictly attempted in a separate answer sheet booklet which must be later tagged together at the end of the exam.
- No additional supplementary answer sheet booklet will be provided.
- Answers to question(s) attempted on an answer sheet booklet for a different part will not be evaluated.
- Part A/Part B /Part C/Part D/Part E should be mentioned on the covering page of the respective answer sheet booklet.

Write short notes on:

**PART C**

5. a) Define pachychoroid spectrum. 5+5  
b) Polypoidal choroidal vasculopathy.
6. Optic neuritis – Causes, types, symptoms & signs and treatment. 2+2+3+3

**OPHTHALMOLOGY****PAPER-II****PART- D**

TIME: 3 HOURS

OPH/D/20/26/II

MAX. MARKS: 100

**IMPORTANT INSTRUCTIONS**

- **Answers to questions of part A, part B, part C, part D & part E are to be strictly attempted in a separate answer sheet booklet which must be later tagged together at the end of the exam.**
- **No additional supplementary answer sheet booklet will be provided.**
- **Answers to question(s) attempted on an answer sheet booklet for a different part will not be evaluated.**
- **Part A/Part B /Part C/Part D/Part E should be mentioned on the covering page of the respective answer sheet booklet.**

**Write short notes on:****PART D**

7. Clinical features, investigations and treatment in a case of neuromyelitis optica (Devic's disease) . 3+4+3
8. a) Causes of acquired nasolacrimal duct obstruction. 3+7  
b) Describe the modalities of its treatment.

**OPHTHALMOLOGY****PAPER-II****PART- E**

TIME: 3 HOURS

OPH/D/20/26/II

MAX. MARKS: 100

**IMPORTANT INSTRUCTIONS**

- Answers to questions of part A, part B, part C, part D & part E are to be strictly attempted in a separate answer sheet booklet which must be later tagged together at the end of the exam.
- No additional supplementary answer sheet booklet will be provided.
- Answers to question(s) attempted on an answer sheet booklet for a different part will not be evaluated.
- Part A/Part B /Part C/Part D/Part E should be mentioned on the covering page of the respective answer sheet booklet.

**Write short notes on:****PART E**

9. A 3-year old child presented to the OPD with unilateral proptosis. 3+3+4  
Discuss differential diagnosis, evaluation and management of this case.
10. Acute posterior multifocal placoid pigment epitheliopathy 2+2+2+2+2  
(APMPPE) – etiology, clinical features, investigations, management and prognosis.

**OPHTHALMOLOGY****PAPER-III**

TIME: 3 HOURS

OPH/D/20/26/III

MAX. MARKS: 100

**IMPORTANT INSTRUCTIONS**

- You are provided with 5 answer sheet booklets. Each individual answer sheet booklet consists of 10 pages excluding the covering jackets.
- This question paper consists of 10 short note questions. Question paper is divided into 5 Parts - A, B, C, D and E, each part containing 2 questions.
- Answers to questions of part A, part B, part C, part D & part E are to be strictly attempted in a separate answer sheet booklet which must be later tagged together at the end of the exam.
- No additional supplementary answer sheet booklet will be provided.
- Answers to question(s) attempted on an answer sheet booklet for a different part will not be evaluated.
- Part A/Part B /Part C/Part D/Part E should be mentioned on the covering page of the respective answer sheet booklet.
- Attempt all questions in order.
- Each question carries 10 marks.
- Read the question carefully and answer to the point neatly and legibly.
- Do not leave any blank pages between two answers.
- Indicate the question number correctly for the answer in the margin space.
- Answer all the parts of a single question together.
- Start the answer to a question on a fresh page or leave adequate space between two answers.
- Draw table/diagrams/flowcharts wherever appropriate.



**OPHTHALMOLOGY****PAPER-III****PART - A**

TIME: 3 HOURS

OPH/D/20/26/III

MAX. MARKS: 100

**IMPORTANT INSTRUCTIONS**

- **Answers to questions of part A, part B, part C, part D & part E are to be strictly attempted in a separate answer sheet booklet which must be later tagged together at the end of the exam.**
- **No additional supplementary answer sheet booklet will be provided.**
- **Answers to question(s) attempted on an answer sheet booklet for a different part will not be evaluated.**
- **Part A/Part B /Part C/Part D/Part E should be mentioned on the covering page of the respective answer sheet booklet.**

**Write short notes on:****PART - A**

1. Horner's syndrome: causes, clinical features and evaluation. 3+2+5
2. Siderosis bulbi: causes, evaluation and management. 2+5+3

**OPHTHALMOLOGY****PAPER-III****PART - B**

TIME: 3 HOURS

OPH/D/20/26/III

MAX. MARKS: 100

**IMPORTANT INSTRUCTIONS**

- **Answers to questions of part A, part B, part C, part D & part E are to be strictly attempted in a separate answer sheet booklet which must be later tagged together at the end of the exam.**
- **No additional supplementary answer sheet booklet will be provided.**
- **Answers to question(s) attempted on an answer sheet booklet for a different part will not be evaluated.**
- **Part A/Part B /Part C/Part D/Part E should be mentioned on the covering page of the respective answer sheet booklet.**

**Write short notes on:****PART- B**

3. Cycloablation techniques in management of glaucoma. 10
4. What are the principles of ptosis surgery? How will you manage a case of congenital ptosis with Marcus Gun-Jaw-winking phenomenon? 5+5

**OPHTHALMOLOGY****PAPER-III****PART - C**

TIME: 3 HOURS

OPH/D/20/26/III

MAX. MARKS: 100

**IMPORTANT INSTRUCTIONS**

- Answers to questions of part A, part B, part C, part D & part E are to be strictly attempted in a separate answer sheet booklet which must be later tagged together at the end of the exam.
- No additional supplementary answer sheet booklet will be provided.
- Answers to question(s) attempted on an answer sheet booklet for a different part will not be evaluated.
- Part A/Part B /Part C/Part D/Part E should be mentioned on the covering page of the respective answer sheet booklet.

Write short notes on:

**PART- C**

5. Contraindications, preoperative preparation and complications of refractive surgery. 2+3+5
6. Indications and principles of inferior oblique weakening procedures. 3+7

**OPHTHALMOLOGY****PAPER-III****PART - D**

TIME: 3 HOURS

OPH/D/20/26/III

MAX. MARKS: 100

**IMPORTANT INSTRUCTIONS**

- **Answers to questions of part A, part B, part C, part D & part E are to be strictly attempted in a separate answer sheet booklet which must be later tagged together at the end of the exam.**
- **No additional supplementary answer sheet booklet will be provided.**
- **Answers to question(s) attempted on an answer sheet booklet for a different part will not be evaluated.**
- **Part A/Part B /Part C/Part D/Part E should be mentioned on the covering page of the respective answer sheet booklet.**

**Write short notes on:****PART- D**

- |    |  |         |
|----|--|---------|
| 7. | Ophthalmic consequences of hydroxychloroquine therapy, risk factors, evaluation & follow up. | 3+2+3+2 |
| 8. | Classify ophthalmoplegia. Discuss the causes and management of internuclear ophthalmoplegia. | 3+(3+4) |

**OPHTHALMOLOGY****PAPER-III****PART- E**

TIME: 3 HOURS

OPH/D/20/26/III

MAX. MARKS: 100

**IMPORTANT INSTRUCTIONS**

- Answers to questions of part A, part B, part C, part D & part E are to be strictly attempted in a separate answer sheet booklet which must be later tagged together at the end of the exam.
- No additional supplementary answer sheet booklet will be provided.
- Answers to question(s) attempted on an answer sheet booklet for a different part will not be evaluated.
- Part A/Part B /Part C/Part D/Part E should be mentioned on the covering page of the respective answer sheet booklet.

**Write short notes on:****PART- E**

9. Vitreous haemorrhage: causes, evaluation and management. 3+3+4
10. Principle, uses and complications of Silicon Oil and their management. 2+2+2+4

**OPHTHALMOLOGY****PAPER-IV**

TIME: 3 HOURS

OPH/D/20/26/IV

MAX. MARKS: 100

**IMPORTANT INSTRUCTIONS**

- **You are provided with 5 answer sheet booklets. Each individual answer sheet booklet consists of 10 pages excluding the covering jackets.**
- **This question paper consists of 10 short note questions. Question paper is divided into 5 Parts - A, B, C, D and E, each part containing 2 questions.**
- **Answers to questions of part A, part B, part C, part D & part E are to be strictly attempted in a separate answer sheet booklet which must be later tagged together at the end of the exam.**
- **No additional supplementary answer sheet booklet will be provided.**
- **Answers to question(s) attempted on an answer sheet booklet for a different part will not be evaluated.**
- **Part A/Part B /Part C/Part D/Part E should be mentioned on the covering page of the respective answer sheet booklet.**
- Attempt all questions in order.
- Each question carries 10 marks.
- Read the question carefully and answer to the point neatly and legibly.
- Do not leave any blank pages between two answers.
- Indicate the question number correctly for the answer in the margin space.
- Answer all the parts of a single question together.
- Start the answer to a question on a fresh page or leave adequate space between two answers.
- Draw table/diagrams/flowcharts wherever appropriate.



**OPHTHALMOLOGY****PAPER-IV****PART - A**

TIME: 3 HOURS

OPH/D/20/26/IV

MAX. MARKS: 100

**IMPORTANT INSTRUCTIONS**

- **Answers to questions of part A, part B, part C, part D & part E are to be strictly attempted in a separate answer sheet booklet which must be later tagged together at the end of the exam.**
- **No additional supplementary answer sheet booklet will be provided.**
- **Answers to question(s) attempted on an answer sheet booklet for a different part will not be evaluated.**
- **Part A/Part B /Part C/Part D/Part E should be mentioned on the covering page of the respective answer sheet booklet.**

**Write short notes on:****PART-A**

1. Discuss low vision. What are various low vision aids available? 3+3+4  
Describe the rehabilitation in patients with macular pathology.
2. A 32-year old lady in her second trimester presented to the OPD for the 3+3+4  
management of glaucoma. How will you manage this case? What is the  
difference in the management of glaucoma in the first, second, third  
trimesters and postpartum?

**OPHTHALMOLOGY****PAPER-IV****PART - B**

TIME: 3 HOURS

OPH/D/20/26/IV

MAX. MARKS: 100

**IMPORTANT INSTRUCTIONS**

- Answers to questions of part A, part B, part C, part D & part E are to be strictly attempted in a separate answer sheet booklet which must be later tagged together at the end of the exam.
- No additional supplementary answer sheet booklet will be provided.
- Answers to question(s) attempted on an answer sheet booklet for a different part will not be evaluated.
- Part A/Part B /Part C/Part D/Part E should be mentioned on the covering page of the respective answer sheet booklet.

**Write short notes on:****PART-B**

3. Discuss FLACS. Mention the merits and demerits of FLACS in the management of (a) white cataract (b) cataract with small pupil. 4+(3+3)
4. Discuss the disinfection of operation theatre. What is the principle of Laminar air flow and its application in operation room? Discuss the method of sterilization of linen, sharp instruments and blunt instruments. 2+5+3

**OPHTHALMOLOGY****PAPER-IV****PART - C**

TIME: 3 HOURS

OPH/D/20/26/IV

MAX. MARKS: 100

**IMPORTANT INSTRUCTIONS**

- **Answers to questions of part A, part B, part C, part D & part E are to be strictly attempted in a separate answer sheet booklet which must be later tagged together at the end of the exam.**
- **No additional supplementary answer sheet booklet will be provided.**
- **Answers to question(s) attempted on an answer sheet booklet for a different part will not be evaluated.**
- **Part A/Part B /Part C/Part D/Part E should be mentioned on the covering page of the respective answer sheet booklet.**

**Write short notes on:****PART-C**

5. Tabulate Ophthalmic manifestations of COVID-19 infection. What are the protocols to be followed while conducting VR surgeries? 5+5
6. Tissue adhesives in ophthalmic surgery. 10

**OPHTHALMOLOGY****PAPER-IV****PART - D**

TIME: 3 HOURS

OPH/D/20/26/IV

MAX. MARKS: 100

**IMPORTANT INSTRUCTIONS**

- **Answers to questions of part A, part B, part C, part D & part E are to be strictly attempted in a separate answer sheet booklet which must be later tagged together at the end of the exam.**
- **No additional supplementary answer sheet booklet will be provided.**
- **Answers to question(s) attempted on an answer sheet booklet for a different part will not be evaluated.**
- **Part A/Part B /Part C/Part D/Part E should be mentioned on the covering page of the respective answer sheet booklet.**

**Write short notes on:****PART-D**

7. Describe methods & indications of genetic therapy in ocular diseases. 5+5  
Discuss genetics in retinal diseases.
8. What are the various intra-vitreous implants available? Name few intraocular steroid implants approved by FDA and mention its indications, contraindications and side-effects. 5+5

**OPHTHALMOLOGY****PAPER-IV****PART - E**

TIME: 3 HOURS

OPH/D/20/26/IV

MAX. MARKS: 100

**IMPORTANT INSTRUCTIONS**

- **Answers to questions of part A, part B, part C, part D & part E are to be strictly attempted in a separate answer sheet booklet which must be later tagged together at the end of the exam.**
- **No additional supplementary answer sheet booklet will be provided.**
- **Answers to question(s) attempted on an answer sheet booklet for a different part will not be evaluated.**
- **Part A/Part B /Part C/Part D/Part E should be mentioned on the covering page of the respective answer sheet booklet.**

**Write short notes on:****PART-E**

- |     |   |    |
|-----|---|----|
| 9.  | Newer perimetry techniques.   | 10 |
| 10. | Role of oxidative stress in vision-threatening ophthalmic diseases. | 10 |

**OPHTHALMOLOGY**  
**PAPER-I**TIME: 3 HOURS  
MAX. MARKS: 100

OPH/J/20/26/I

**IMPORTANT INSTRUCTIONS**

- This question paper consists of 10 questions divided into Part “A” and part “B”, each part containing 5 questions.
- Answers to questions of part A and part B are to be strictly attempted in separate answer sheet(s) and the main + supplementary answer sheet(s) used for each part must be tagged separately.
- Answers to question(s) of Part A attempted in answer sheet(s) of part B or Vice versa shall not be evaluated.
- Answer sheets of Part A and Part B are not to be tagged together.
- Part A and Part B should be mentioned only on the covering page of the respective answer sheets.
- Attempt all questions in order.
- Each question carries 10 marks.
- Read the question carefully and answer to the point neatly and legibly.
- Do not leave any blank pages between two answers.
- Indicate the question number correctly for the answer in the margin space.
- Answer all the parts of a single question together.
- Start the answer to a question on a fresh page or leave adequate space between two answers.
- Draw table/diagrams/flowcharts wherever appropriate.

**Write short notes on:****PART A**

- |  |       |
|--|-------|
| 1. Electrophysiological basis of ERG and EOG and its clinical applications.  | 5+5   |
| 2. a) Neural pathway for tear secretion by lacrimal gland.<br>b) Tests for evaluating tear film.<br>c) Etiopathogenesis of Sjogren’s syndrome. | 3+3+4 |
| 3. a) Anatomy of angle of anterior chamber.<br>b) Principle of gonioscopy and various types of gonioscopes.                                    | 5+5   |
| 4. a) Anatomy,<br>b) Biochemical composition, and<br>c) Functions of retinal pigment epithelium.   | 3+2+5 |
| 5. Enumerate two immunosuppressive agents used in allergic eye diseases. Elaborate their mechanism of action and side effects.                 | 10    |

**P.T.O**



**OPHTHALMOLOGY**  
**PAPER-I****Please read carefully the important instructions mentioned on Page '1'**

- Answers to questions of Part A and part B are to be strictly attempted in separate answer sheets and the main + supplementary answer sheets used for each part must be tagged separately.
- Answers to question(s) of Part A attempted in answer sheets of Part B or vice versa shall not be evaluated.

**PART B**

6. a) Draw a labelled diagram to describe the anatomy of macula. 3+4+3  
b) What are macular function tests?  
c) What is their clinical significance?
7. What are prisms? Describe their clinical and therapeutic applications in ophthalmology. 3+7
8. a) Describe microscopic structure of cornea. 4+6  
b) Discuss factors responsible for maintaining transparency of cornea.
9. a) Macro and Micro anatomy of the vitreous. 5+5  
b) Discuss vitreous substitutes in detail.
10. a) Clinical manifestation and complications of myopia. 5+5  
b) Surgical correction of myopia.

\*\*\*\*\*

**OPHTHALMOLOGY**  
**PAPER-II**TIME: 3 HOURS  
MAX. MARKS: 100

OPH/J/20/26/II

**IMPORTANT INSTRUCTIONS**

- This question paper consists of 10 questions divided into Part "A" and part "B", each part containing 5 questions.
- Answers to questions of part A and part B are to be strictly attempted in separate answer sheet(s) and the main + supplementary answer sheet(s) used for each part must be tagged separately.
- Answers to question(s) of Part A attempted in answer sheet(s) of part B or Vice versa shall not be evaluated.
- Answer sheets of Part A and Part B are not to be tagged together.
- Part A and Part B should be mentioned only on the covering page of the respective answer sheets.
- Attempt all questions in order.
- Each question carries 10 marks.
- Read the question carefully and answer to the point neatly and legibly.
- Do not leave any blank pages between two answers.
- Indicate the question number correctly for the answer in the margin space.
- Answer all the parts of a single question together.
- Start the answer to a question on a fresh page or leave adequate space between two answers.
- Draw table/diagrams/flowcharts wherever appropriate.

**Write short notes on:****PART A**

- |    |   |         |
|----|---|---------|
| 1. | Types, indications, advantages & disadvantages and complications of anterior lamellar keratoplasty.   | 2+2+4+2 |
| 2. | a) What are the differential diagnosis and features to differentiate from each other, in a patient with pigmented lesion on fundus examination?<br>b) What are the indications for biopsy with management strategies in a case of Primary Acquired Melanosis (PAM)? | 5+5     |
| 3. | A middle age female presents with unilateral proptosis of one-year duration. Discuss differential diagnosis, evaluation, and management.  | 3+3+4   |
| 4. | Diagnosis and management of a non-resolving diabetic macular oedema.  | 4+6     |
| 5. | Etiology, evaluation, classification and management of retinopathy of prematurity.  | 2+2+2+4 |

**P.T.O**

**OPHTHALMOLOGY**  
**PAPER-II****Please read carefully the important instructions mentioned on Page '1'**

- Answers to questions of Part A and part B are to be strictly attempted in separate answer sheets and the main + supplementary answer sheets used for each part must be tagged separately.
- Answers to question(s) of Part A attempted in answer sheets of Part B or vice versa shall not be evaluated.

**PART B**

- |     |   |         |
|-----|---|---------|
| 6.  | a) What is Dua's classification of chemical injuries?                               | 3+2+5   |
|     | b) How it is better than Roper-Hall classification?                                 |         |
|     | c) Management strategies of grade III and grade IV chemical injuries.               |         |
| 7.  | Differentiate between:  | 2+4+4   |
|     | a) Iris processes and PAS (Peripheral Anterior Synechia).                           |         |
|     | b) Pigmentary glaucoma and pseudoexfoliation.                                       |         |
|     | c) Spaeth and Shaffer classification angle.   |         |
| 8.  | a) Etiopathogenesis and histopathology of ocular surface squamous neoplasia (OSSN). | (2+3)+5 |
|     | b) Use of anti-metabolites in the management of OSSN.                               |         |
| 9.  | a) Eale's disease.  | 5+5     |
|     | b) Vitreous substitutes.  |         |
| 10. | Differential diagnosis of painful ophthalmoplegia in a 40-year-old woman.           | 10      |

\*\*\*\*\*

**OPHTHALMOLOGY**  
**PAPER-III**TIME: 3 HOURS  
MAX. MARKS: 100

OPH/J/20/26/III

**IMPORTANT INSTRUCTIONS**

- This question paper consists of 10 questions divided into Part “A” and part “B”, each part containing 5 questions.
- Answers to questions of part A and part B are to be strictly attempted in separate answer sheet(s) and the main + supplementary answer sheet(s) used for each part must be tagged separately.
- Answers to question(s) of Part A attempted in answer sheet(s) of part B or Vice versa shall not be evaluated.
- Answer sheets of Part A and Part B are not to be tagged together.
- Part A and Part B should be mentioned only on the covering page of the respective answer sheets.
- Attempt all questions in order.
- Each question carries 10 marks.
- Read the question carefully and answer to the point neatly and legibly.
- Do not leave any blank pages between two answers.
- Indicate the question number correctly for the answer in the margin space.
- Answer all the parts of a single question together.
- Start the answer to a question on a fresh page or leave adequate space between two answers.
- Draw table/diagrams/flowcharts wherever appropriate.

**Write short notes on:****PART A**

1. a) Enumerate options to overcome small pupil in cataract surgery. 5+5  
b) Risks and complications of phakic IOLs implantation.
2. a) Surgical options for management of cicatricial entropion 5+5  
b) Describe types of orbital exenteration with their indications.
3. Indications, techniques and adverse effects of laser iridotomy, selective 3+4+3  
laser trabeculoplasty and argon laser trabeculoplasty.
4. a) Ocular manifestations of neurofibromatosis. 5+5  
b) Ocular manifestations of Hansen’s disease?
5. a) Traumatic optic neuropathy. 5+5  
b) Optic nerve sheath fenestration surgery.

**P.T.O**

**OPHTHALMOLOGY**  
**PAPER-III****Please read carefully the important instructions mentioned on Page '1'**

- Answers to questions of Part A and part B are to be strictly attempted in separate answer sheets and the main + supplementary answer sheets used for each part must be tagged separately.
- Answers to question(s) of Part A attempted in answer sheets of Part B or vice versa shall not be evaluated.

**PART B**

- |     |   |       |
|-----|---|-------|
| 6.  | a) Enumerate presenting features of 3rd nerve palsy.  | 3+2+5 |
|     | b) When will you decide for surgical intervention? Discuss surgical techniques.   |       |
| 7.  | Indications and complications of pars plana vitrectomy.   | 5+5   |
| 8.  | A 12-year-old child sustained injury to right eye while playing with bow and arrow. Discuss the management of corneoscleral perforation with iris prolapse in this patient. | 10    |
| 9.  | a) Enumerate various types of keratoplasty.   | 5+5   |
|     | b) Indications, procedure and complications of Deep Anterior Lamellar Keratoplasty (DALK) along with complications.   |       |
| 10. | Classification and management of esotropia in a child.  | 5+5   |

\*\*\*\*\*

**OPHTHALMOLOGY**  
**PAPER-IV**TIME: 3 HOURS  
MAX. MARKS: 100

OPH/J/20/26/IV

**IMPORTANT INSTRUCTIONS**

- This question paper consists of 10 questions divided into Part “A” and part “B”, each part containing 5 questions.
- Answers to questions of part A and part B are to be strictly attempted in separate answer sheet(s) and the main + supplementary answer sheet(s) used for each part must be tagged separately.
- Answers to question(s) of Part A attempted in answer sheet(s) of part B or Vice versa shall not be evaluated.
- Answer sheets of Part A and Part B are not to be tagged together.
- Part A and Part B should be mentioned only on the covering page of the respective answer sheets.
- Attempt all questions in order.
- Each question carries 10 marks.
- Read the question carefully and answer to the point neatly and legibly.
- Do not leave any blank pages between two answers.
- Indicate the question number correctly for the answer in the margin space.
- Answer all the parts of a single question together.
- Start the answer to a question on a fresh page or leave adequate space between two answers.
- Draw table/diagrams/flowcharts wherever appropriate.

**Write short notes on:****PART A**

- |    |  |     |
|----|--|-----|
| 1. | a) Rho kinase inhibitors in Ophthalmology.<br>b) Micro-Invasive Glaucoma Surgery (MIGS).   | 5+5 |
| 2. | Intravitreal Aflibercept Injection: mechanism of action, indications, dosage and adverse events. Add a note on comparative effectiveness with other drugs of same group. | 5+5 |
| 3. | a) Balloon Assisted Lacrimal Surgery.<br>b) Implants used for orbital reconstruction - advantages and disadvantages.   | 5+5 |
| 4. | a) DRCR.net protocols for macular edema.<br>b) VEGF-trap.  | 5+5 |
| 5. | a) Lamellar Keratoplasty: types and indication.<br>b) DMEK.  | 5+5 |

**P.T.O**



**OPHTHALMOLOGY**  
**PAPER-IV****Please read carefully the important instructions mentioned on Page '1'**

- Answers to questions of Part A and part B are to be strictly attempted in separate answer sheets and the main + supplementary answer sheets used for each part must be tagged separately.
- Answers to question(s) of Part A attempted in answer sheets of Part B or vice versa shall not be evaluated.

**PART B**

- |     |  |         |
|-----|--|---------|
| 6.  | Differentiate between Regression, Progression and Ectasia post LASIK with respect to refractive errors. What is WF-Optimized, WF-Guided and Contoura procedures? | 5+5     |
| 7.  | What is canaloplasty? Discuss indications, technique, IOP lowering efficacy and adverse effects.   | 3+7     |
| 8.  | a) Topical chemotherapy for ocular tumours.<br>b) Enumerate options for management of uveitic macular oedema (UMO).  | 5+5     |
| 9.  | a) Diagnosis of Meibomian gland dysfunction.<br>b) DEWS 2 definition of dry eyes.<br>c) Intense pulsed light therapy.<br>d) Lipiflow.                            | 4+2+2+2 |
| 10. | Use of smartphone for Ophthalmic imaging & tele ophthalmology.   | 10      |

\*\*\*\*\*

