

[KO 211] MARCH 2006 Sub. Code : 2222

M.S. DEGREE EXAMINATION.

Branch III — Ophthalmology

**Paper I — APPLIED BASIC SCIENCES IN
OPHTHALMOLOGY**

Time : Three hours **Maximum : 100 marks**

Theory : Two hours and twenty minutes	Theory : 60 marks
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M.C.Q. : Forty minutes M.C.Q. : 40 marks

Answer any TWO short notes on each Subject.

All questions carry equal marks.

Draw suitable diagrams wherever necessary.

(ANATOMY)

1. (a) Anatomy of Cavernous sinus
- (b) Embryological Development of human lens
- (c) Fascial spaces of orbit.

MARCH 2006

(PHYSIOLOGY)

2. (a) Theories of colour vision
- (b) Dynamics of aqueous formation
- (c) ERG.

(BIOCHEMISTRY)

3. (a) Anaerobic glucose metabolism.
- (b) Rhodopsin cycle.
- (c) Metabolic basis of premature cataracts.

(PHARMACOLOGY)

4. (a) Vitreous substitutes.
- (b) Antiviral drugs.
- (c) Parasympatholytic drugs.

(MICROBIOLOGY)

5. (a) Morphological features of HIV and mention common ocular manifestations in AIDS.
- (b) Anterior chamber associated immune deviation.
- (c) Morax-Axenfeld Bacillus.

(PATHOLOGY)

6. (a) Pathological features of retinoblastoma.
 - (b) Pathological features of sympathetic ophthalmitis.
 - (c) Histopathology of basal cell carcinoma of eye lid.
-

SEPTEMBER 2006

[KP 211]

Sub. Code : 2222

M.S. DEGREE EXAMINATION.

Branch III — Ophthalmology

**Paper I — APPLIED BASIC SCIENCES IN
OPHTHALMOLOGY**

Time : Three hours

Maximum : 100 marks

**Theory : Two hours and
twenty minutes**

Theory : 60 marks

M.C.Q. : Forty minutes

M.C.Q. : 40 marks

Answer any TWO short notes on each Subject.

All questions carry equal marks.

Draw suitable diagrams wherever necessary.

(ANATOMY)

(2 × 5 = 10)

- 1. Angle of the anterior chamber.**
- 2. Visual pathway**
- 3. Anatomy of the lid.**

SEPTEMBER 2006

(PHYSIOLOGY)

(2 × 5 = 10)

4. Maintenance of corneal transparency.
5. Theories of colour vision.
6. Tear film.

(BIOCHEMISTRY)

(2 × 5 = 10)

7. Metabolism of crystalline lens.
8. Photo chemistry of vision
9. Metabolic disorder's of lipids.

(PHARMACOLOGY)

(2 × 5 = 10)

10. Antifungal drugs.
11. Anti glaucoma drugs (Drugs used in glaucoma)
12. Steroids in ophthalmology.

(MICROBIOLOGY)

(2 × 5 = 10)

13. Herpeszoster virus.
14. Cysticercus – ocular manifestations.
15. Pseudomonas bacteria.

(PATHOLOGY)

(2 × 5 = 10)

16. Pathological feature of malignant melanoma.
 17. Describe corneal dystrophy.
 18. Vascular pathology in Diabetic retinopathy.
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[KQ 210] MARCH 2007

Sub. Code : 2222

M.S. DEGREE EXAMINATION.

Branch III — Ophthalmology

Candidates admitted from 2004-05 onwards

Paper I — APPLIED BASIC SCIENCES IN
OPHTHALMOLOGY

Time : Three hours

Maximum : 100 marks

Theory : Two hours and

Theory : 60 marks

twenty minutes

M.C.Q. : Forty minutes

M.C.Q. : 40 marks

Answer any TWO short notes in each subject.

All questions carry equal marks.

(ANATOMY)

(2 × 5 = 10)

1. (a) Orbicularis oculi muscle
- (b) Foscial artery
- (c) Infra orbital nerve.

MARCH 2007

(PHYSIOLOGY)

(2 × 5 = 10)

2. (a) Astigmatism
(b) Depth perception
(c) Aqueous humor.

(BIOCHEMISTRY)

(2 × 5 = 10)

3. (a) Glucose tolerance test
(b) Lipoproteins
(c) Anion gap.

(PHARMACOLOGY)

(2 × 5 = 10)

4. (a) Flurbiprofen
(b) Ciprofloxacin
(c) Latanoprost.

(MICROBIOLOGY)

(2 × 5 = 10)

5. (a) Keratomycosis
(b) Sterilisation by autoclaving
(c) Gonococcal infection of the eye.

(PATHOLOGY)

(2 × 5 = 10)

6. (a) Inflammatory pseudotumor of orbit
(b) Pathogenesis of diabetic micro angiopathy
(c) Trachoma.
-

SEPTEMBER 2007

[KR 219]

Sub. Code : 2225

M.S. DEGREE EXAMINATION.

Branch III — Ophthalmology

(Candidates admitted upto 2003-04)

and

(Candidates admitted from 2004-05 onwards)

**Paper I — APPLIED BASIC SCIENCES IN
OPHTHALMOLOGY**

Time : Three hours

Maximum : 100 marks

**Theory : Two hours and
twenty minutes**

Theory : 60 marks

M.C.Q. : Forty minutes

M.C.Q. : 40 marks

Answer any TWO short notes in each subject.

All questions carry equal marks.

Short notes :

ANATOMY

(2 × 5 = 10)

1. Development of retina.
2. Lacrimal gland.
3. Optic nerve.

PHYSIOLOGY

(2 × 5 = 10)

1. Pannum's area.
2. AC/A ratio.
3. Visual pigments.

BIOCHEMISTRY

(2 × 5 = 10)

1. Lysozyme
2. Immunoglobulins in tear.
3. Glutathione.

MICROBIOLOGY

(2 × 5 = 10)

1. Adenovirus
2. Polymerase chain reaction
3. Microbial stains used in ophthalmology.

PHARMACOLOGY

(2 × 5 = 10)

1. Tear substitutes.
2. Triamcinolone.
3. Anti VEGF.

PATHOLOGY

(2 × 5 = 10)

1. Pseudotumours of orbit.
2. Pathogenesis of sympathetic ophthalmia
3. Pathology in hypertensive retinopathy.

March-2008

[KS 219]

Sub. Code : 2225

M.S. DEGREE EXAMINATION.

Branch III — Ophthalmology

(Candidates admitted from 2004-05 onwards)

**Paper I — APPLIED BASIC SCIENCES IN
OPHTHALMOLOGY**

Q.P. Code : 222225

Time : Three hours

Maximum : 100 marks

Draw suitable diagrams wherever necessary.

ANATOMY

Out of Five, FOUR questions should be answered.

(4 × 5 = 20)

1. Development of lens
2. Circle of Willis
3. Anatomy of lid
4. Superior orbital fissure
5. Vitreous.

PHYSIOLOGY

Out of Five, FOUR questions should be answered.
(4 × 5 = 20)

1. Theories of accommodation
2. Formation and circulation of Aqueous
3. Maintenance of corneal transparency
4. Lacrimal secretion and tear film layer
5. ERG.

BIOCHEMISTRY

Out of Four, THREE questions should be answered.
(3 × 5 = 15)

1. Metabolism of lens
2. Photochemistry of vision
3. Glucose tolerance test.
4. Metabolic disorders of lipid.

MICROBIOLOGY

Out of Four, THREE questions should be answered.
(3 × 5 = 15)

1. Antigen antibody reaction
2. Pneumococcus
3. Adenovirus
4. Cysticercus

PHARMACOLOGY

Out of Four, THREE questions should be answered.
(3 × 5 = 15)

1. Cycloplegics
2. Fluorescein dye
3. Antiviral drugs
4. Anti VEGF (Vascular Endothelial Growth Factor).

PATHOLOGY

Out of Four, THREE questions should be answered.
(3 × 5 = 15)

1. Pathogenesis of sympathetic ophthalmia
2. Concretions
3. Stromal corneal dystrophies
4. Pathology of retinoblastoma.

September 2008

[KT 219]

Sub. Code: 2225

M.S. DEGREE EXAMINATION

Branch III –Ophthalmology

**Paper I – APPLIED BASIC SCIENCES IN
OPHTHALMOLOGY**

(For candidates admitted from 2004-2005 onwards)

Q.P. Code : 222225

Time : Three hours

Maximum : 100 marks

All questions carry equal marks.

I. ANATOMY – Answer any FOUR : (4 X 5 = 20)

1. Development of eye.
2. Corneal endothelium.
3. Retina.
4. Superior orbital fissure.
5. Angle of Anterior Chamber.

II. PHYSIOLOGY – Answer any FOUR : (4 X 5 = 20)

1. Blood Aqueous Barrier.
2. EOG.
3. Corneal endothelial pump.
4. Optics of contact lens.
5. Visual pathways.

III. BIOCHEMISTRY– Answer any THREE : (3 X 5 = 15)

1. Immunoglobulins in tear.
2. Biochemical changes in Diabetic Retinopathy.
3. Lenticular metabolism.
4. Glycosylated Haemoglobin Test.

IV. MICROBIOLOGY – Answer any THREE : (3 X 5 = 15)

1. Pseudomonas.
2. Herpes zoster.
3. Grams stain.
4. Aspergillosis.

V. PHARMACOLOGY– Answer any THREE : (3 X 5 = 15)

1. Viscoelastic substances.
2. Perfluoropropane.
3. Silicon oil.
4. Anti VEGI (Vascular endothelial Growth factor).

VI. PATHOLOGY– Answer any THREE : (3 X 5 = 15)

1. Pathology of toxoplasma retinitis.
 2. Pathology of Retinoblastoma.
 3. Conjunctival cyst.
 4. Corneal Degenerations.
-

March 2009

[KU 219]

Sub. Code: 2225

M.S. DEGREE EXAMINATION

Branch III – OPHTHALMOLOGY

(For candidates admitted from 2004-2005 to 2008-2009 onwards)

Paper I – APPLIED BASIC SCIENCES IN OPHTHALMOLOGY

Q.P. Code : 222225

Time : Three hours

Maximum : 100 marks

All questions carry equal marks

I. ANATOMY – Answer any FOUR : (4 x 5 = 20)

1. Development of retina.
2. Blood supply of optic nerve head.
3. Relations of cavernous sinus.
4. Visual pathway.
5. Angle of anterior chamber.

II. PHYSIOLOGY – Answer any FOUR : (4 x 5 = 20)

1. Theories of color vision.
2. Electro oculogram.
3. Pupillary reflexes.
4. Dynamics of aqueous formation.
5. Binocular single vision.

III. BIOCHEMISTRY– Answer any THREE : (3 x 5 = 15)

1. Metabolism of vitreous.
2. Anaerobic glucose metabolism.
3. Waldeyer's visual cycle.
4. Biochemical changes during.

IV. MICROBIOLOGY – Answer any THREE : (3 x 5 = 15)

1. Chlamydia trachomatis.
2. Human immuno deficiency virus.
3. Hypersensitivity in Eye.
4. Diphtheria bacillus.

V. PHARMACOLOGY– Answer any THREE : (3 x 5 = 15)

1. Anti fungal drugs.
2. Immuno suppressive drugs (immuno suppressive drugs).
3. Vitreous substitutes.
4. Anti metabolites.

VI. PATHOLOGY– Answer any THREE : (3 x 5 = 15)

1. Histopathology of malignant melanoma.
2. pathological features of endophthalmitis.
3. Dalen fuchs nodules.
4. Vascular changes in diabetic retinopathy.

September 2009

[KV 219]

Sub. Code: 2225

M.S. DEGREE EXAMINATION

Branch III – OPHTHALMOLOGY

(For candidates admitted from 2004-2005 to 2008-2009 onwards)

Paper I – APPLIED BASIC SCIENCES IN OPHTHALMOLOGY

Q.P. Code : 222225

Time : Three hours

Maximum : 100 marks

All questions carry equal marks

I. ANATOMY – Answer any FOUR : (4 x 5 = 20)

1. Ciliary body and muscle.
2. Cavernous sinus.
3. Angle of anterior chamber
4. Anatomy of lid.
5. Orbital spaces.

II. PHYSIOLOGY – Answer any FOUR : (4 x 5 = 20)

1. Theories of color vision.
2. Pupillary reactions and pathway.
3. Blood aqueous barrier.
4. Maintenance of corneal transparency.
5. Lacrimal secretion and drainage.

III. BIOCHEMISTRY– Answer any THREE : (3 x 5 = 15)

1. Photochemistry of vision.
2. Metabolic lipid disorders.
3. Pathogenesis of cataract in diabetics.
4. Amino acid – normal and abnormal metabolism.

IV. MICROBIOLOGY – Answer any THREE : (3 x 5 = 15)

1. Cytomegalo virus.
2. Cysticercosis.
3. Toxoplasmosis.
4. Hypersensitivity reactions.

V. PHARMACOLOGY– Answer any THREE : (3 x 5 = 15)

1. β – blockers
2. Tear substitutes.
3. Drug delivery techniques
4. Anti fungals.

VI. PATHOLOGY– Answer any THREE : (3 x 5 = 15)

1. Basal cell carcinoma.
2. Proliferative retinopathy.
3. Stromal dystrophies.
4. HLA-B27 uveitis.

March 2010

[KW 219]

Sub. Code: 2225

M.S. DEGREE EXAMINATION

Branch III – OPHTHALMOLOGY

Paper I - (For candidates admitted from 2004-2005 to 2007-08) and

Part I – (for candidates admitted from 2008-2009 onwards)

APPLIED BASIC SCIENCES IN OPHTHALMOLOGY

Q.P. Code : 222225

Time : Three hours

Maximum : 100 marks

Answer ALL questions

Draw suitable diagram wherever necessary

I. ANATOMY

(4 x 5 = 20)

1. Optic foramen.
2. Anatomy of the cornea.
3. Development of the eye.
4. Blood supply to the eye.

II. PHYSIOLOGY

(4 x 5 = 20)

1. Aqueous humour dynamics.
2. Physiology of the vision.
3. Pupillary reflex.
4. Theories of colour vision.

III. BIOCHEMISTRY

(3 x 5 = 15)

1. Ocular metabolism.
2. Lipid profile.
3. Photopic vision.

IV. MICROBIOLOGY

(3 x 5 = 15)

1. Gonococcus.
2. Hydatid cyst.
3. Chlamydia trachomatis.

V. PHARMACOLOGY

(3 x 5 = 15)

1. Lignocaine.
2. Sympathomimetic drugs.
3. Rose Bengal.

V1. PATHOLOGY

(3 x 5 = 15)

1. Arcus senilis.
2. Pathogenesis of uveitis.
3. Pathology of malignant melanoma.

[KX 219]

September 2010

Sub. Code: 2225

M.S. DEGREE EXAMINATION

Branch III –Ophthalmology

APPLIED BASIC SCIENCES IN OPHTHALMOLOGY

Paper I - (For candidates admitted from 2004-2005 to 2007-08) and

Part I – (for candidates admitted from 2008-2009 onwards)

Q.P. Code : 222225

Time : Three hours

Maximum : 100 marks

Draw suitable diagram wherever necessary.

Answer ALL questions.

I. ANATOMY (4 X 5 = 20)

1. Anatomy of Optic nerve.
2. Anatomy of Human lens.
3. Development of the eye.
4. Ciliary body.

II. PHYSIOLOGY (4 X 5 = 20)

1. Lacrimal secretion.
2. Physiology of Binocular vision.
3. Pupillary reactions and pathway.
4. Physiology of accommodation.

III. BIOCHEMISTRY (3 X 5 = 15)

1. Biochemical changes in cataract.
2. Disorders of Lipid metabolism.
3. Photochemistry of vision.

IV. MICROBIOLOGY (3 X 5 = 15)

1. Retrovirus.
2. Hypersensitivity reactions.
3. Herpes Simplex.

V. PHARMACOLOGY (3 X 5 = 15)

1. Antifungal drugs for ophthalmic use.
2. Cyclosporine.
3. 5-Fluorouracil.

VI. PATHOLOGY (3 X 5 = 15)

1. Kaposi's sarcoma.
2. Pathogenesis of uveitis.
3. Retinoblastoma.

May 2011

[KY 219]

Sub. Code: 2225

M.S. DEGREE EXAMINATION

BRANCH III –OPHTHALMOLOGY

APPLIED BASIC SCIENCES IN OPHTHALMOLOGY

Q.P. Code : 222225

Time : 3 hours

Maximum : 100 marks

(180 Min)

Answer ALL questions in the same order.

Write notes on

Pages (Max.)	Time (Max.)	Marks (Max.)
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I. ANATOMY

- | | | | |
|--|---|---|---|
| 1. Anatomy of superior orbital fissure. | 3 | 9 | 5 |
| 2. The nerve supply and actions of the recti and oblique muscles of the eyeball. | 3 | 9 | 5 |
| 3. Central retinal artery. | 3 | 9 | 5 |
| 4. Development of human lens. | 3 | 9 | 5 |

II. PHYSIOLOGY

- | | | | |
|--|---|---|---|
| 1. Theories of accommodation. | 3 | 9 | 5 |
| 2. Lacrimal secretion and tear film layer. | 3 | 9 | 5 |
| 3. Scotopic vision. | 3 | 9 | 5 |
| 4. Electro Oculogram (EOG). | 3 | 9 | 5 |

III. BIOCHEMISTRY

- | | | | |
|------------------------------------|---|---|---|
| 1. Walds visual cycle. | 3 | 9 | 5 |
| 2. Composition of vitreous humour. | 3 | 9 | 5 |
| 3. Free radical damage. | 3 | 9 | 5 |

IV. MICROBIOLOGY

- | | | | |
|----------------------------------|---|---|---|
| 1. Cysticercus. | 3 | 9 | 5 |
| 2. Laboratory diagnosis of AIDS. | 3 | 9 | 5 |
| 3. Candidiasis. | 3 | 9 | 5 |

V. PHARMACOLOGY

- | | | | |
|--|---|---|---|
| 1. ACE (Angiotensin Converting Enzyme) inhibitors. | 3 | 9 | 5 |
| 2. Vitreous substitutes. | 3 | 9 | 5 |
| 3. Cycloplegics. | 3 | 9 | 5 |

VI. PATHOLOGY

- | | | | |
|---------------------------------|---|---|---|
| 1. Pathology of Retinoblastoma. | 3 | 9 | 5 |
| 2. Suppurative endophthalmitis. | 3 | 9 | 5 |
| 3. Siderosis bulbi. | 3 | 9 | 5 |

October 2011

[KZ 219]

Sub. Code: 2225

M.S. DEGREE EXAMINATION
BRANCH III – OPHTHALMOLOGY
APPLIED BASIC SCIENCES IN OPHTHALMOLOGY
Q.P. Code : 222225

Time : 3 hours
(180 Min)

Maximum : 100 marks

Answer ALL questions in the same order.

Write notes on

	Pages (Max.)	Time (Max.)	Marks (Max.)
I. ANATOMY			
1. Optic chiasma.	3	9	5
2. Innervations of ciliary body and Iris.	3	9	5
3. Innervation of lacrimal gland.	3	9	5
4. Anatomy of orbit.	3	9	5
II. PHYSIOLOGY			
1. Physiological control of extra ocular muscles.	3	9	5
2. Aqueous drainage.	3	9	5
3. Hering's law.	3	9	5
4. Light near dissociation.	3	9	5
III. BIOCHEMISTRY			
1. Glycosamino glycanes.	3	9	5
2. Biosynthesis of prostaglandins.	3	9	5
3. Generation of free radicals.	3	9	5
IV. MICROBIOLOGY			
1. AIDS virus.	3	9	5
2. Acanthamoeba.	3	9	5
3. Type IV hypersensitive reaction.	3	9	5
V. PHARMACOLOGY			
1. Acyclovir.	3	9	5
2. Natamycin.	3	9	5
3. Dorzolamide.	3	9	5
VI. PATHOLOGY			
1. Malignant melanoma.	3	9	5
2. Optic atrophy.	3	9	5
3. Choroidal new vessels.	3	9	5

April 2012

[LA 219]

Sub. Code: 2225

M.S. DEGREE EXAMINATION

BRANCH III –OPHTHALMOLOGY

APPLIED BASIC SCIENCES IN OPHTHALMOLOGY

Q.P. Code : 222225

Time : 3 hours

Maximum : 100 marks

(180 Min)

Answer ALL questions in the same order.

Write notes on

Pages	Time	Marks
(Max.)	(Max.)	(Max.)

I. ANATOMY

1. Blood Supply of Visual Cortex.	3	9	5
2. Muscles of Iris.	3	9	5
3. Levator Palpebrae superioris.	3	9	5
4. Development of retina.	3	9	5

II. PHYSIOLOGY

1. Maintenance of Intraocular pressure.	3	9	5
2. Factors responsible for corneal avascularity.	3	9	5
3. Theories of colour vision.	3	9	5
4. Blood retinal Barrier.	3	9	5

III. BIOCHEMISTRY

1. Sorbitol pathway	3	9	5
2. Composition and drainage of aqueous humour.	3	9	5
3. Photochemistry of Vision.	3	9	5

IV. MICROBIOLOGY

1. Mycobacterium.	3	9	5
2. Laboratory Diagnosis of Trachoma.	3	9	5
3. HLA Antigen.	3	9	5

V. PHARMACOLOGY

1. Mytomycin C	3	9	5
2. Botulinum toxin in Ophthalmology.	3	9	5
3. Fluorescein Dye	3	9	5

VI. PATHOLOGY

1. Sebaceous gland Carcinoma	3	9	5
2. Macular corneal dystrophy.	3	9	5
3. Hypertensive retinopathy.	3	9	5

M.S. DEGREE EXAMINATION
BRANCH III –OPHTHALMOLOGY
APPLIED BASIC SCIENCES IN OPHTHALMOLOGY
Q.P. Code : 222225

Time : 3 hours
(180 Min)

Maximum : 100 marks

Answer ALL questions in the same order.

Write notes on

Pages Time Marks
(Max.) (Max.) (Max.)

I. ANATOMY

- | | | | |
|---|---|---|---|
| 1. Describe the development and anatomy of Vitreous. | 3 | 9 | 5 |
| 2. Describe the course of Sixth cranial Nerve. | 3 | 9 | 5 |
| 3. Describe the anatomy of the angle of Anterior chamber and developmental anomalies associated with it. | 3 | 9 | 5 |
| 4. Describe the anatomy of the Visual pathways and Visual cortex. Mention localizing signs of visual pathway. | 3 | 9 | 5 |

II. PHYSIOLOGY

- | | | | |
|---|---|---|---|
| 1. Describe the theories of Accommodation and its anomalies. | 3 | 9 | 5 |
| 2. Discuss the factors maintaining the intraocular pressure. | 3 | 9 | 5 |
| 3. Discuss Binocular Vision. | 3 | 9 | 5 |
| 4. Describe the corneal physiology and mechanism of its transparency. | 3 | 9 | 5 |

III. BIOCHEMISTRY

- | | | | |
|---|---|---|---|
| 1. Metabolism of Vitreous. | 3 | 9 | 5 |
| 2. Lipid profile and its significance in Ophthalmology. | 3 | 9 | 5 |
| 3. Glycosylated Haemoglobin and its importance. | 3 | 9 | 5 |

IV. MICROBIOLOGY

- | | | | |
|---|---|---|---|
| 1. Lab. Diagnosis of Cytomegalovirus. | 3 | 9 | 5 |
| 2. Polymerase Chain Reaction and its uses in Ophthalmology. | 3 | 9 | 5 |
| 3. Sterilization of Operation Theatre. | 3 | 9 | 5 |

V. PHARMACOLOGY

- | | | | |
|--|---|---|---|
| 1. Local anesthetics in ophthalmic practice. | 3 | 9 | 5 |
| 2. Drugs used in Herpes zoster Ophthalmicus. | 3 | 9 | 5 |
| 3. Tear Substitutes. | 3 | 9 | 5 |

VI. PATHOLOGY

- | | | | |
|--|---|---|---|
| 1. Pathology of Uveitits. | 3 | 9 | 5 |
| 2. Histopathology of Malignant Melanoma. | 3 | 9 | 5 |
| 3. Pathology of Trachoma. | 3 | 9 | 5 |

**M.S. DEGREE EXAMINATION
BRANCH III – OPHTHALMOLOGY
APPLIED BASIC SCIENCES IN OPHTHALMOLOGY**

Q.P. Code : 222225

Time: Three Hours

Maximum: 100 marks

Answer ALL questions in the same order.

Write notes on:

I. ANATOMY **(4 x 5 = 20)**

1. Angle of anterior Chamber.
2. Circle of Willis.
3. Superior Oblique Muscle.
4. Development of Vitreous.

II. PHYSIOLOGY **(4 x 5 = 20)**

1. Formation and circulation of Aqueous Humor.
2. Precorneal Tear Film and functions of tear fluid.
3. Binocular Vision.
4. Electro retinogram.

III. BIO-CHEMISTRY **(3 x 5 = 15)**

1. Metabolism of Cornea.
2. Composition of tears.
3. Biochemical changes leading to Cataract.

IV. PHARMACOLOGY **(3 x 5 = 15)**

1. Ocular Aneasthetics.
2. Latanoprost.
3. Antiviral Drugs.

V. MICROBIOLOGY **(3 x 5 = 15)**

1. Neisseria.
2. Laboratory Diagnosis of Fungus.
3. ELISA

VI. PATHOLOGY **(3 x 5 = 15)**

1. Malignant Melanoma of choroid.
2. Keratoconus.
3. Dalen Fuch's nodules.

**M.S. DEGREE EXAMINATION
BRANCH III – OPHTHALMOLOGY**

**PAPER I – APPLIED BASIC SCIENCES IN OPHTHALMOLOGY
Q.P. Code : 222225**

Time: Three Hours

Maximum: 100 marks

Answer ALL questions

Write notes on:

I. ANATOMY (4 x 5 = 20)

1. Development of lens.
2. Macula.
3. Blood supply of Iris.
4. Medial wall of the orbit.

II. PHYSIOLOGY (4 x 5 = 20)

1. Blood retinal barrier.
2. Dark adaptation.
3. Transparency of cornea.
4. Colour vision.

III. BIO-CHEMISTRY (3 x 5 = 15)

1. Compare the composition of aqueous and vitreous.
2. Sorbitol pathway.
3. Chemical composition of tear film.

IV. PHARMACOLOGY (3 x 5 = 15)

1. Cycloplegics.
2. Tear film substitutes.
3. Anti VEGF.

V. MICROBIOLOGY (3 x 5 = 15)

1. Chlamydia.
2. Stains used in microbiology.
3. Sterilization of instruments in ophthalmology

VI. PATHOLOGY (3 x 5 = 15)

1. Pathology of choroidal melanoma.
2. Basal cell carcinoma.
3. Hypertensive retinopathy.

[LH 219]

OCTOBER 2015

Sub. Code: 2225

**M.S. DEGREE EXAMINATION
BRANCH III – OPHTHALMOLOGY**

PAPER I – APPLIED BASIC SCIENCES IN OPHTHALMOLOGY

Q.P. Code : 222225

Time: Three Hours

Maximum: 100 marks

Answer ALL questions

Write notes on:

I. ANATOMY (4 x 5 = 20)

1. Trabecular meshwork.
2. Development of cornea.
3. Course and branches of ophthalmic artery.
4. Visual pathway.

II. PHYSIOLOGY (4 x 5 = 20)

1. Corneal transparency.
2. Depth perception.
3. Binocular single vision.
4. Purkinje phenomenon.

III. BIO-CHEMISTRY (3 x 5 = 15)

1. Metabolism of crystalline lens.
2. Photochemistry of vision.
3. Homocystinuria.

IV. PHARMACOLOGY (3 x 5 = 15)

1. Travoprost.
2. Triamcinolone.
3. Tear substitutes.

V. MICROBIOLOGY (3 x 5 = 15)

1. Chlamydia.
2. Adenovirus.
3. Toxoplasma gondii.

VI. PATHOLOGY (3 x 5 = 15)

1. Phacolytic glaucoma.
2. Pseudotumour.
3. Rhabdomyosarcoma.

[LI 219]

APRIL 2016

Sub. Code: 2225

**M.S. DEGREE EXAMINATION
BRANCH III – OPHTHALMOLOGY**

PAPER I – APPLIED BASIC SCIENCES IN OPHTHALMOLOGY

Q.P. Code :222225

Time : Three Hours

Maximum : 100 Marks

Write Notes on :

I. ANATOMY: (4 x 5 = 20)

1. Optic chiasma.
2. Ciliary body.
3. Blood supply of lacrimal gland.
4. Orbital walls.

II. PHYSIOLOGY: (4 x 5 = 20)

1. Theory of accommodation.
2. Aqueous pathway.
3. Scotopic vision.
4. Visually evoked potential.

III.BIO-CHEMISTRY: (3 x 5 = 15)

1. Metabolism of vitreous.
2. Waldeyer's visual cycle.
3. Biosynthesis of prostaglandins.

IV. PHARMACOLOGY: (3 x 5 = 15)

1. Cyclosporine.
2. Viscoelastics.
3. Natamycin.

V. MICROBIOLOGY: (3 x 5 = 15)

1. AIDS virus.
2. Gram's stain.
3. Pseudomonas.

VI. PATHOLOGY: (3 x 5 = 15)

1. Pathogenesis of sympathetic ophthalmia.
2. Retinoblastoma.
3. Pathogenesis of Diabetic microangiopathy.

[LJ 219]

OCTOBER 2016

Sub. Code: 2225

**M.S. DEGREE EXAMINATION
BRANCH III – OPHTHALMOLOGY**

PAPER I – APPLIED BASIC SCIENCES IN OPHTHALMOLOGY

Q.P. Code :222225

Time : Three Hours

Maximum : 100 Marks

Write Notes on :

I. ANATOMY: (4 x 5 = 20)

1. Development of Lens.
2. Levator muscle.
3. Eyelid – upper eyelid.
4. Anatomy of Fovea.

II. PHYSIOLOGY: (4 x 5 = 20)

1. Mechanism of lacrimal tear drainage.
2. Theories of colour vision.
3. Physiological Nystagmus.
4. Electro-oculography.

III.BIO-CHEMISTRY: (3 x 5 = 15)

1. Composition of aqueous humour.
2. Sorbitol pathway.
3. Anaerobic glycolysis.

IV. PHARMACOLOGY: (3 x 5 = 15)

1. Albendazole.
2. Brimonidine.
3. Idoxiuridine.

V. MICROBIOLOGY: (3 x 5 = 15)

1. Moraxella lacunata.
2. Trichinella spiralis.
3. McCoy cell culture.

VI. PATHOLOGY: (3 x 5 = 15)

1. Koeppe's nodules.
2. Meningioma.
3. Tumours of lacrimal gland.

[LK 219]

MAY 2017

Sub. Code: 2225

M.S. DEGREE EXAMINATION

BRANCH III – OPHTHALMOLOGY

PAPER I – APPLIED BASIC SCIENCES IN OPHTHALMOLOGY

Q.P. Code :222225

Time : Three Hours

Maximum : 100 Marks

Write Notes on :

I. ANATOMY:

(4 x 5 = 20)

1. Cavernous sinus.
2. Blood supply of optic nerve.
3. Clinical anatomy of eye lids.
4. Peripheral fundus.

II. PHYSIOLOGY:

(4 x 5 = 20)

1. Macular function tests.
2. Protective mechanism of ocular surface.
3. Blood aqueous barrier.
4. Eletro oculogram.

III.BIO-CHEMISTRY:

(3 x 5 = 15)

1. Compare the composition of normal and catractus lens.
2. Rhodopsin cycle.
3. Homocystinuria.

IV. PHARMACOLOGY:

(3 x 5 = 15)

1. Ophthalmic viscoelastic substances.
2. Drug therapy for toxoplasmosis.
3. Botulinum Toxin.

V. MICROBIOLOGY:

(3 x 5 = 15)

1. Cytomegalo virus.
2. Lab diagnosis for ocular tuberculosis.
3. Sterilisation of sharp instruments.

VI. PATHOLOGY:

(3 x 5 = 15)

1. Bullous keratopathy.
2. Metabolic cataract.
3. Rhabdomyosarcoma.

[LL 219]

OCTOBER 2017

Sub. Code: 2225

M.S. DEGREE EXAMINATION

BRANCH III – OPHTHALMOLOGY

PAPER I – APPLIED BASIC SCIENCES IN OPHTHALMOLOGY

Q.P. Code :222225

Time : Three Hours

Maximum : 100 Marks

Write Notes on :

I. ANATOMY: (4 x 5 = 20)

1. Vitreous attachments.
2. Superior oblique muscle.
3. Various spaces within the eyeball.
4. Lacrimal drainage system.

II. PHYSIOLOGY: (4 x 5 = 20)

1. Binocular single vision.
2. Macular function tests.
3. Tear film.
4. Gonioscopy – Principles.

III.BIO-CHEMISTRY: (3 x 5 = 15)

1. Role of glycosylated hemoglobin.
2. Lipoproteins.
3. Immuno globulin in tear fluid.

IV. PHARMACOLOGY: (3 x 5 = 15)

1. Immuno modulators.
2. Intra ocular drug implants.
3. Acyclovir.

V. MICROBIOLOGY: (3 x 5 = 15)

1. Corynebacterium xerosis.
2. Filamentous fungi.
3. Microbiological study in endophthalmitis.

VI. PATHOLOGY: (3 x 5 = 15)

1. Iris cysts.
2. Cystoid macular oedema.
3. Pathogenesis of siderosis bulbi.

[LM 219]

MAY 2018

Sub. Code: 2225

M.S. DEGREE EXAMINATION

BRANCH III – OPHTHALMOLOGY

PAPER I – APPLIED BASIC SCIENCES IN OPHTHALMOLOGY

Q.P. Code :222225

Time : Three Hours

Maximum : 100 Marks

Write Notes on :

I. ANATOMY: (4 x 5 = 20)

1. Surgical spaces of orbit.
2. Cavernous sinus.
3. Limbus.
4. Ophthalmic artery.

II. PHYSIOLOGY: (4 x 5 = 20)

1. Grades of binocular vision.
2. Reduced eye.
3. Panum's area.
4. Entoptic phenomenon.

III. BIO-CHEMISTRY: (3 x 5 = 15)

1. Biochemical composition of tears.
2. Corneal metabolism.
3. Lipoproteins.

IV. PHARMACOLOGY: (3 x 5 = 15)

1. Carbonic anhydrase inhibitors.
2. Anti metabolites.
3. Mast cell stabilizer.

V. MICROBIOLOGY: (3 x 5 = 15)

1. Polymerase chain reaction.
2. Herpes zoster virus.
3. Cysticercus and its ocular manifestation.

VI. PATHOLOGY: (3 x 5 = 15)

1. Nodules in the eye.
2. Fine needle aspiration biopsy.
3. Glioma.

M.S. DEGREE EXAMINATION

BRANCH III – OPHTHALMOLOGY

PAPER I – APPLIED BASIC SCIENCES IN OPHTHALMOLOGY

Q.P. Code: 222225

Time : Three Hours

Maximum : 100 Marks

Write Notes on :

I. ANATOMY: (4 x 5 = 20)

1. Inferior Orbital wall.
2. Optic Chiasma.
3. Suspensary ligaments.
4. Angle of the anterior chamber.

II. PHYSIOLOGY: (4 x 5 = 20)

1. Corneal Endothelium.
2. Binocular single vision.
3. Accommodation.
4. Visually Evoked Potential (VEP).

III. BIO-CHEMISTRY: (3 x 5 = 15)

1. Vitamin A.
2. Metabolism of Vitreous.
3. Aerobic glycolysis.

IV. PHARMACOLOGY: (3 x 5 = 15)

1. Mydriatics.
2. Acetazolamide.
3. Anti VEGFs.

V. MICROBIOLOGY: (3 x 5 = 15)

1. Identification of Acanthamoeba.
2. Polymerase chain Reaction (PCR).
3. TRIC Organisms.

VI. PATHOLOGY: (3 x 5 = 15)

1. Vogt – Koyanagi – Harada (VKH) Disease.
2. Histo Pathological examination of Retinoblastoma.
3. Horner Trantas spots.

M.S. DEGREE EXAMINATION

BRANCH III – OPHTHALMOLOGY

PAPER I – APPLIED BASIC SCIENCES IN OPHTHALMOLOGY

Q.P. Code: 222225

Time : Three Hours

Maximum : 100 Marks

Write Notes on :

I. ANATOMY: (4 x 5 = 20)

1. Blood Retinal Barrier.
2. Levator palpebrae superioris.
3. Limbal stem cells.
4. Optic nerve head.

II. PHYSIOLOGY: (4 x 5 = 20)

1. Tonometry.
2. Convergence insufficiency.
3. Colour vision tests.
4. Abnormal pupillary reflex.

III. BIO-CHEMISTRY: (3 x 5 = 15)

1. Metabolism of vitreous.
2. Wald's visual cycle.
3. Anaerobic glucose metabolism.

IV. PHARMACOLOGY: (3 x 5 = 15)

1. Cycloplegics.
2. Neuro protectors.
3. Ganciclovir.

V. MICROBIOLOGY: (3 x 5 = 15)

1. Stains in fungal corneal ulcer.
2. Acanthamoeba.
3. Antigen – antibody reaction.

VI. PATHOLOGY: (3 x 5 = 15)

1. Mooren's ulcer.
2. Malignant melanoma.
3. Premalignant lesions of lid.

M.S. DEGREE EXAMINATION

BRANCH III – OPHTHALMOLOGY

PAPER I – APPLIED BASIC SCIENCES IN OPHTHALMOLOGY

Q.P. Code: 222225

Time : Three Hours

Maximum : 100 Marks

Write Notes on :

I. ANATOMY: (4 x 5 = 20)

1. Lacrimal gland.
2. Ciliary ganglion.
3. Superior oblique muscle.
4. Development of vitreous.

II. PHYSIOLOGY: (4 x 5 = 20)

1. Visual adaptations.
2. Laws governing ocular motility.
3. Depth perception.
4. Factors influencing the intra ocular pressure.

III. BIO-CHEMISTRY: (3 x 5 = 15)

1. Composition of vitreous.
2. Free radicals.
3. Glycosylated haemoglobin.

IV. PHARMACOLOGY: (3 x 5 = 15)

1. Prostaglandin Analogues.
2. Immunosuppressants in ophthalmology.
3. Drug delivering techniques.

V. MICROBIOLOGY: (3 x 5 = 15)

1. Toxoplasmosis.
2. Candidiasis.
3. Adenovirus.

VI. PATHOLOGY: (3 x 5 = 15)

1. Pathological changes in age related macular degeneration.
2. Basal cell carcinoma.
3. Pathology in hypertensive retinopathy.

**M.S. DEGREE EXAMINATION
BRANCH III – OPHTHALMOLOGY
PAPER I – APPLIED BASIC SCIENCES IN OPHTHALMOLOGY
Q.P. Code: 222225**

Time : Three Hours

Maximum : 100 Marks

Write Notes on :

I. ANATOMY: (4 x 5 = 20)

1. Anatomy of macula
2. Orbital spaces
3. Intraocular muscles
4. Abducent nerve

II. PHYSIOLOGY: (4 x 5 = 20)

1. Light – near dissociation
2. Blood aqueous barrier
3. Visually evoked potential
4. Corneal transparency

III. BIO-CHEMISTRY: (3 x 5 = 15)

1. Mechanism of diabetic cataract
2. Lipid metabolism
3. Vascular endothelial factor

IV. PHARMACOLOGY: (3 x 5 = 15)

1. Intraocular drug implants
2. Immune modulators in ocular disorders
3. Hyper osmotic agents

V. MICROBIOLOGY: (3 x 5 = 15)

1. Laboratory diagnosis of trachoma
2. Graft versus host response
3. Fungi in ocular infection

VI. PATHOLOGY: (3 x 5 = 15)

1. Pathology of corneal dystrophies
2. Sympathetic ophthalmia
3. Tumours of lacrimal sac

BRANCH III – OPHTHALMOLOGY

PAPER I – APPLIED BASIC SCIENCES IN OPHTHALMOLOGY

Q.P. Code: 222225

Time : Three Hours

Maximum : 100 Marks

Write Notes on :

I. ANATOMY:

(4 x 5 = 20)

1. Vitreous attachments
2. Surgical limbus
3. Muscles in eyelid
4. Trochlear nerve

II. PHYSIOLOGY:

(4 x 5 = 20)

1. Eletro oculogram
2. Factors affecting ocular rigidity
3. Metabolism of lens
4. Binocular vision

III.BIO-CHEMISTRY:

(3 x 5 = 15)

1. Lens proteins
2. Composition of tear film
3. Axoplasmic flow in optic nerve

IV. PHARMACOLOGY:

(3 x 5 = 15)

1. Adhesives in ophthalmology
2. Infliximab
3. Carbonic anhydrase inhibitors

V. MICROBIOLOGY:

(3 x 5 = 15)

1. Elisa
2. Corynebacterium diphtheria
3. Ocular immune response

VI. PATHOLOGY:

(3 x 5 = 15)

1. Asteroid hyalosis
2. Premalignant lesions of conjunctiva
3. Panophthalmitis

(MAY 2021 SESSION)
M.S. DEGREE EXAMINATION

BRANCH III – OPHTHALMOLOGY

PAPER I – APPLIED BASIC SCIENCES IN OPHTHALMOLOGY

Q.P. Code: 222225

Time : Three Hours

Maximum : 100 Marks

Write Notes on :

I. ANATOMY:

(4 x 5 = 20)

1. Fascial spaces of orbit.
2. Angle of anterior chamber.
3. Orbicularis oculi.
4. Blood supply of optic nerve head.

II. PHYSIOLOGY:

(4 x 5 = 20)

1. Electro oculogram.
2. Maintenance of corneal transparency.
3. Physiology of accommodation.
4. Scotopic vision.

III. BIO-CHEMISTRY:

(3 x 5 = 15)

1. Sorbitol pathway.
2. Composition of aqueous humor.
3. Tear film composition.

IV. PHARMACOLOGY:

(3 x 5 = 15)

1. Tear substitutes.
2. Antifungal agents.
3. Cyclosporine.

V. MICROBIOLOGY:

(3 x 5 = 15)

1. Pseudomonas.
2. Herpes Zoster.
3. Cysticercosis.

VI. PATHOLOGY:

(3 x 5 = 15)

1. Pathology of Retinoblastoma.
2. Corneal stromal dystrophies.
3. Vascular changes in Diabetic retinopathy.

[MS 1121]

NOVEMBER 2021
(OCTOBER 2021 SESSION)
M.S. DEGREE EXAMINATION

Sub. Code: 2225

BRANCH III – OPHTHALMOLOGY

PAPER I – APPLIED BASIC SCIENCES IN OPHTHALMOLOGY

Q.P. Code: 222225

Time : Three Hours

Maximum : 100 Marks

Write Notes on :

I. ANATOMY: (4 x 5 = 20)

1. Anatomy of upper lid.
2. Ciliary body.
3. Superior orbital fissure.
4. Blood supply of visual cortex.

II. PHYSIOLOGY: (4 x 5 = 20)

1. Formation and circulation of aqueous humour.
2. Tear film and its functions.
3. Electroretinogram.
4. Macular function tests.

III. BIO-CHEMISTRY: (3 x 5 = 15)

1. Homocystinuria.
2. Corneal transparency.
3. Metabolism of lens.

IV. PHARMACOLOGY: (3 x 5 = 15)

1. Natamycin.
2. Betablockers.
3. Acyclovir.

V. MICROBIOLOGY: (3 x 5 = 15)

1. Morax Axenfeld bacillus.
2. Rhinosporidiosis.
3. Polymerase chain reaction (PCR).

VI. PATHOLOGY: (3 x 5 = 15)

1. Fine needle aspiration cytology (FNAC).
2. Horner Trantas spots.
3. Dalen Fuch's nodules.

* * * * *

THE TAMIL NADU DR.M.G.R. MEDICAL UNIVERSITY

[MS 1022]

OCTOBER 2022

Sub. Code: 2225

M.S. DEGREE EXAMINATION

BRANCH III – OPHTHALMOLOGY

PAPER I – APPLIED BASIC SCIENCES IN OPHTHALMOLOGY

Q.P. Code: 222225

Time : Three Hours

Maximum : 100 Marks

Write Notes on :

I. ANATOMY:

(4 x 5 = 20)

1. Development of Eye.
2. Ophthalmic Artery.
3. Superior Orbital Fissure.
4. Anatomy of Lacrimal gland.

II. PHYSIOLOGY:

(4 x 5 = 20)

1. Abnormal Retinal Correspondence.
2. Rods and Cones.
3. Electroretinogram.
4. Macular Function Tests.

III.BIO-CHEMISTRY:

(3 x 5 = 15)

1. Biochemical composition of tears.
2. Metabolism of Lens.
3. Homocystinuria.

IV. PHARMACOLOGY:

(3 x 5 = 15)

1. Ketoconazole.
2. Routes of Administration of Drugs in Eye.
3. Aflibercept.

V. MICROBIOLOGY:

(3 x 5 = 15)

1. Herpes Zoster Virus.
2. Laboratory Diagnosis of HIV virus.
3. Onchocerciasis.

VI. PATHOLOGY:

(3 x 5 = 15)

1. Pathogenesis of Metabolic Cataract.
2. Pathology of Lacrimal gland carcinoma.
3. Histopathology of Retinoblastoma.

THE TAMIL NADU DR.M.G.R. MEDICAL UNIVERSITY

[MS 0723]

JULY 2023

Sub. Code: 2225

(MAY 2023 EXAM SESSION)

M.S. DEGREE EXAMINATION

BRANCH III – OPHTHALMOLOGY

PAPER I – APPLIED BASIC SCIENCES IN OPHTHALMOLOGY

Q.P. Code: 222225

Time : Three Hours

Maximum : 100 Marks

Write Notes on :

I. ANATOMY:

(4 x 5 = 20)

1. Development of Retina.
2. Relations of cavernous sinus.
3. Visual pathway.
4. Limbal stem cells.

II. PHYSIOLOGY:

(4 x 5 = 20)

1. Theories of color vision.
2. Electro oculogram.
3. Factors responsible for corneal avascularity.
4. Cardinal Gaze Positions.

III.BIO-CHEMISTRY:

(3 x 5 = 15)

1. Vascular endothelial growth factor.
2. Axoplasmic flow in optic nerve.
3. Waldeyer's visual cycle.

IV. PHARMACOLOGY:

(3 x 5 = 15)

1. Anti fungal drugs.
2. Immuno suppressive drugs.
3. Intraocular drug implants.

V. PATHOLOGY:

(3 x 5 = 15)

1. Histopathology of malignant melanoma.
2. Premalignant lesions of conjunctiva.
3. Vascular changes in diabetic retinopathy.

VI. MICROBIOLOGY:

(3 x 5 = 15)

1. Chlamydia trachomatis.
2. Fungi in ocular infection.
3. Hypersensitivity in Eye.

THE TAMIL NADU DR.M.G.R. MEDICAL UNIVERSITY

[MS 1223]

**DECEMBER 2023
(OCTOBER 2023 EXAM SESSION)**

Sub. Code: 2225

**M.S. DEGREE EXAMINATION
BRANCH III – OPHTHALMOLOGY**

PAPER I – APPLIED BASIC SCIENCES IN OPHTHALMOLOGY

Q.P. Code: 222225

Time : Three Hours

Maximum : 100 Marks

Write Notes on :

I. ANATOMY: (4 x 5 = 20)

1. Levator palpebrae superiors.
2. Intraocular muscles.
3. Orbit and its walls.
4. Blood supply of occipital cortex (Visual area).

II. PHYSIOLOGY: (4 x 5 = 20)

1. Visually Evoked Potential (VEP).
2. Synoptophore.
3. Types of aberrations.
4. Asteriod hyalosis.

III.BIO-CHEMISTRY: (3 x 5 = 15)

1. Blood aqueous barrier.
2. Sorbitol metabolism in lens.
3. Marfan's Syndrome.

IV. PHARMACOLOGY: (3 x 5 = 15)

1. Topical Antihistaminics for Eye.
2. Low potency topical steroids.
3. Posterior subcutaneous injections.

V. PATHOLOGY: (3 x 5 = 15)

1. Pathogenesis of Drusen.
2. Pathology of OSSN.
3. Uses of fluorescein dye.

VI. MICROBIOLOGY: (3 x 5 = 15)

1. Commensals in the eyes.
2. Microsporidial infections of eye.
3. Culture media for fungus.