

**Second Year B.Sc. Optometry Degree Examination**  
**Model Question Paper**  
**Nutrition & Biochemistry and Pharmacology**  
**(2014 Scheme)**

**Time: 3 hrs**

**Maximum Marks: 80**

- **Answer all questions**
- **Draw diagrams wherever necessary**
- **Write Section A and Section B in separate answer books. Do not mix up questions from Section A and Section B**

**QP Code:**

**Section A: Nutrition & Biochemistry**

**Marks:40**

**Essay**

**(10)**

1. Describe the dietary sources, requirement, biochemical functions and deficiency manifestations of vitamin A.

**Short notes**

**(3 x 5=15)**

2. Formation of aqueous humor
3. Jaundice
4. Oral glucose tolerance test

**Answer briefly**

**(5 x 2 =10)**

5. Balanced diet.
6. Pellagra.
7. Significance of TCA cycle.
8. Respiratory alkalosis.
9. Galactosemia

**Fill in the blanks**

**(5 x 1 =5)**

10. Schilling test is done to detect deficiency of which vitamin.
11. The lens contains insoluble proteins called .....
12. Limiting amino acid in pulses is .....
13. A neurotransmitter identified in the retina is .....
14. Toxic metabolite produced from methanol is .....

**(P.T.O)**

QP Code:

Section B: Pharmacology

Marks:40

Essay

(10)

1. Describe the factors affecting permeability of ocular drugs. Add a note on the routes of administration of ocular drugs.

Short notes

(3 x 5 =15)

2. Antiglaucoma drugs
3. Tear substitutes
4. Vitamine A deficiency

Answer briefly

(5 x 2 =10)

5. Fluorescin sodium
6. Acyclovir
7. Antifungal agents
8. Vitamin A deficiency
9. Lubricants

Fill in the blanks

(5 x 1=5)

10. Name an anticoagulant used in eye diseases
11. One ocular side effect of systemic steroid is-----.
12. Ketorolac sodium belongs to ----- group of drugs
13. Rose Bengal is used in the diagnosis of -----.
14. Name one preservative used in eye drops.

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**Second Year B.Sc. Optometry Degree Examination**  
**Model Question Paper**  
**Pathology and Microbiology**

**(2014 Scheme)**

**Time: 3 hrs**

**Maximum Marks: 80**

- **Answer all questions**
- **Draw diagrams wherever necessary**
- **Write Section A and Section B in separate answer books. Do not mix up questions from Section A and Section B**

**QP Code:**

**Section A: Pathology**

**Marks: 40**

**Essay**

**(1x10=10)**

1. Define and classify immunity. Discuss about acquired immunity in detail

**Short notes**

**(3x5=15)**

2. Toxoplasmosis
3. Type IV hypersensitivity
4. ELISA test

**Answer briefly**

**(5x2=10)**

5. Methicillin resistant staphylococcus aureus (MRSA)
6. Opportunistic fungal infections
7. Pseudomonas
8. Potassium hydroxide mount (KOH Mount)
9. Immunoglobulin M

**Fill in the blanks**

**(5x1=5)**

- 10 Name a motile gram negative bacillus
11. Mention an example for transport media
12. Name one autoimmune disease affecting the eye
13. Name the culture media used to isolate mycobacterium tuberculosis
14. Name a protozoon which affects the eye

**(PTO)**

**QP Code:**

**Section B: Microbiology**

**Marks: 40**

**Essay**

**(10)**

1. Define inflammation. Enumerate the cardinal signs of inflammation. Describe the phases of primary wound healing. Enumerate the complications of wound healing.

**Short notes**

**(3x5=15)**

2. Differences between necrosis and apoptosis
3. Types of emboli
4. Ocular complications of diabetes mellitus

**Answer briefly**

**(5x2=10)**

5. Differences between hyperplasia and hypertrophy
6. Collection of urine
7. Red blood cells in Iron deficiency anemia
8. Define tumor differentiation
9. Retinoblastoma

**Fill in the blanks**

**(5x1=5)**

10. Two malignant tumors of mesenchymal origin
11. Ingredients of Leishman stain
12. Name 2 coagulation disorders
13. Name 2 changes occurring in acute bacterial diseases
14. The organism causing formation of caseating granuloma is

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**Second Year B.Sc. Optometry Degree Examination**  
**Model Question Paper**  
**Clinical Examination of Visual Systems and Ophthalmic Instruments**  
**(2014 Scheme)**

**QP Code:**

**Time: 2 hrs**

**Maximum Marks: 40**

- **Answer all questions**
- **Draw diagrams wherever necessary**

**Essay** (10)

1. What is visual field and mention the different components. Describe different methods of field charting.

**Short notes** (3 x 5=15)

2. Muscle balance tests
3. Tests for colour vision
4. Low vision aids

**Answer briefly** (5 x 2=10)

5. Amsler grid
6. Maddox rod
7. Pachymeter
8. Examination of pupil
9. Methods of illumination in slit lamp

**Fill in the blanks** (5 x 1 =5)

10. Schirmer test is done for detecting .....
11. Scissor shadow is seen in.....
12. Maddox wing is used for.....
13. Two tests for visual acuity in pre-school children
14. Mention the purpose of interferometry

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**Second Year B.Sc. Optometry Degree Examination**  
**Model Question Paper**  
**Visual Optics**  
**(2014 Scheme)**

**QP Code:**

**Time: 2 hrs**

**Maximum Marks: 40**

- **Answer all questions**
- **Draw diagrams wherever necessary**

**Essay** (10)

1. Define retinoscopy and explain the pre-requisites for retinoscopy

**Short notes** (3 x 5=15)

2. Toric transposition
3. Difficulties in retinoscopy
4. Back vertex distance and power

**Answer briefly** (5 x 2=10)

5. Anisometropia
6. High index lenses
7. Dynamic retinoscopy
8. Aspheric lenses
9. Find out the resultant power of this combination. (+2 D.cyl 90) + (+4 D cyl 180 )

**Fill in the blanks** (5 x 1 =5)

10. Type of refractive error in newborns
11. The optometer principle is used in -----
12. ----- is a drug which has only mydriatic effect without cycloplegia
13. Segment top of spectacle lens should be at the level of -----
14. ----- is based on the fact that the anterior surface of the cornea acts as a convex mirror and the size of the image formed varies with its curvature

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**Second Year B.Sc. Optometry Degree Examination**  
**Model Question Paper**  
**Optometric Optics**

**(2014 Scheme)**

**QP Code:**

**Time: 2 hrs**

**Maximum Marks: 40**

- Answer all questions
- Draw diagrams wherever necessary

**Essay** (10)

1. Derive the formula to find sphero-cylindrical equivalent for obliquely crossed cylinders, with neat diagrams and description.

**Short notes** (3 x 5=15)

2. Mention any five differences between soft and hard progressive addition lens design.
3. A lens is said to have a power of -4.25D in the vertical meridian and -2.50D in the horizontal meridian. Write out its prescription in the toric form with +4.00D base curve.
4. Different types of bifocal lenses

**Answer briefly** (5 x 2=10)

5. What is image jump. Find the jump exerted by the lens, +2.50DS; Add +2.50D, 27mm segment diameter.
6. Define prism diopter and mention its unit.
7. Mention two differences between soft and hard designs of progressive addition lenses.
8. Define rotary prism and mention its application in optometric practice.
9. Name any two differences between individual batch process and the continuous flow process of manufacturing ophthalmic lenses.

**Fill in the blanks** (5 x 1 =5)

10. The equation used to calculate reflectance of optical lens surface is \_\_\_\_\_.
11. When lightning strikes a bed of dry sand, the natural glass formed due to fusing of sand is \_\_\_\_\_.
12. Frames that are suitable for use as safety glasses must have \_\_\_\_\_ code written on them.
13. The central portion of the lens in which the prescription exists is called \_\_\_\_\_ of a lenticular lens.
14. The transposed form of the prescription +1.00DS/-5.00DC \* 20 degrees is -----

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