

SRI DEVARAJ URS ACADEMY OF HIGHER EDUCATION & RESEARCH
(A DEEMED TO BE UNIVERSITY)

B.Sc. Allied Health Sciences Second Year Semester-III

September 2021 Examination

B.Sc. Ophthalmic Technology & Optometry

Time: 3 Hrs.

Paper – I

[Max. Marks: 100]

Ocular Anatomy & Ocular Physiology

Your answers should be specific to the questions asked.

Draw neat labelled diagrams wherever necessary.

(Use separate answer booklet for Section A & B)

Section – A

Ocular Anatomy (50 Marks)

Q.P Code : J3235

LONG ESSAY

2 X 10 = 20 Marks

1. Explain layers of retina and its applied anatomy.
2. Describe the development of eyeball

SHORT ESSAY (Answer any three)

3 X 5 = 15 Marks

3. Name the extraocular muscles and mention their nerve supply and actions
4. Describe the microscopic structure of Optic nerve
5. Lacrimal apparatus.
6. Describe the structure and function of Lens.
7. Describe the Visual pathway and its lesions

SHORT ANSWERS (Answer any five)

5 X 3 = 15 Marks

8. Central artery of retina.
9. Draw a neat labelled diagram of Histology of cornea.
10. What is trabecular meshwork?
11. Conjunctiva.
12. Structure passing through superior orbital fissure.
13. Vitreous humor
14. Name the bones forming the bony orbit.

Section – B

Ocular Physiology (50 Marks)

Q.P Code : J3236

(Use separate answer booklet for Section-B)

LONG ESSAY

2 X 10 = 20 Marks

1. Explain how colour is appreciated. Classify colour blindness.
2. Trace the accommodation reflex pathway. Explain the changes during accommodation

SHORT ESSAY (Answer any three)

3 X 5 = 15 Marks

3. Explain the basic defect in astigmatism
4. List the differences between sympathetic & parasympathetic division on eye
5. Describe strabismus
6. Define field of vision. Mention its normal limits in different quadrants
7. Describe the factors affecting transparency of cornea

SHORT ANSWERS (Answer any five)

5 X 3 = 15 Marks

8. Mention the instrument used to record of Intraocular pressure
9. List the functions of retina
10. Give the cause for bitemporal hemianopia
11. List the areas in visual cortex & mention its functions
12. Define myopia and give its correction
13. List the factors affecting transparency of cornea
14. Draw a neat labeled diagram of rods

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Paper – II

[Max. Marks: 100]

Ocular Microbiology & Ocular Biochemistry

Your answers should be specific to the questions asked.

Draw neat labelled diagrams wherever necessary.

(Use separate answer booklet for Section A & B)

Section – A

Ocular Microbiology (50 Marks)

Q.P Code : J3245

LONG ESSAY

2X10=20 Marks

1. Enumerate the microorganisms infecting the eye. Which samples are collected to diagnose streptococcal infections of the eye? (3+2+5)
2. Classify sterilization methods. Describe in detail the working principle of hot air oven with a diagram. List the articles sterilized in the hot air oven. (3+5+2)

SHORT ESSAY. (Answer any three)

3X5=15Marks

3. Describe the principle and applications of autoclave
4. Name the causative agents of Trachoma. Describe the clinical manifestations and lab diagnosis of Trachoma
5. Antimicrobial Susceptibility testing
6. Laboratory diagnosis of herpes keratitis
7. ZN Staining

SHORT ANSWERS (Answer any five)

5x3= 15 Marks

8. Enumerate three agents causing conjunctivitis.
9. Name three bacteria causing infections after cataract surgery
10. Name three parasites causing eye infections.
11. Name three antibiotics acting on bacterial cell wall
12. What is Cold sterilization? and give two examples.
13. Name 5 moments of hand hygiene
14. Name 3 Viruses transmitted by corneal transplant

Section – B

Ocular Biochemistry (50 Marks)

Q.P Code : J3246

(Use separate answer booklet for Section-B)

LONG ESSAY

2 X 10 = 20 Marks

1. Describe the chemistry, RDA and biochemical role of Vit A in vision. Add a note on deficiency manifestations of Vit A.
2. Describe the composition and metabolism of lens. Add a note on cataract formation

SHORT ESSAY (Answer any three)

3 X 5 = 15 Marks

3. Write the composition and functions of tear film.
4. Describe the biochemical composition and functions of cornea.
5. Write the composition and functions of Aqueous humour.
6. Describe the structure and functions of Retina.
7. What are glycosaminoglycans? Give examples and explain their biochemical functions.

SHORT ANSWERS (Answer any five)

5 X 3 = 15 Marks

8. Write any three biochemical functions of Vit C.
9. Mention the normal serum levels of a) Albumin b) Globulin c) A/G Ratio.
10. Mention any three functions of glutathione.
11. Mention three muscle proteins and their functions.
12. List any three irrigating solutions. Mention the uses of irrigating solutions.
13. Photoreceptor cells.
14. What is glaucoma?

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[Max. Marks : 100]

Paper-III

Physical & Physiological Optics

Q.P Code : J3250

*Your answers should be specific to the questions asked.
Draw neat labeled diagrams wherever necessary.*

LONG ESSAY

2 x 10 = 20 Marks

1. Define Retinoscopy and principle. Draw and describe the optics of movement of reflexes in case of emmetropia during Retinoscopy.
2. What is Presbyopia? Enlist the signs and symptoms of Presbyopia. Explain the methods to correct the Presbyopia.

SHORT ESSAY (Answer any 10 questions)

10 x 5 = 50 Marks

3. Write a note on Lensometer.
4. Describe the etiology, clinical features and treatment of Keratoconus.
5. Write a note on Astigmatic fan and block.
6. What is Duochrome test? What is the basic principle of Duochrome test.
7. Advantages of IOL insertion, over spectacle correction in Aphakia.
8. Write down the procedures in performing Retinoscopy.
9. Discuss the advantages and disadvantages of Autorerfractor.
10. Give an account of Raman Effect.
11. Anisometropia.
12. Explain Brewster's laws and its importance.
13. Images formed by a plane mirror.
14. When and why do we prescribe prisms in spectacle prescription.

SHORT ANSWERS (Answer any 10 questions)

10 x 3 = 30 Marks

15. Mention the tools used in evaluation of Astigmatism.
16. Fermat's principle.
17. State Huygens principle for the propagation of light.
18. Raman Effect.
19. Types of Retinoscope.
20. Problem of high convex lens.
21. Causes for Insufficiency of Accommodation.
22. Photoelectric effect.
23. Optics of movement of reflex in emmetropia.
24. Neutralization of red reflex.
25. Retinal image size.
26. Features of P. ...

