SRI DEVARAJ URS ACADEMY OF HIGHER EDUCATION & RESEARCH

(A DEEMED TO BE UNIVERSITY)

B.Sc. Ophthalmic Technology & Optometry

Second Year Semester-III

February 2020 Examination

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. Draw a neat labeled diagram showing the layers of the eyeball. Explain layers of retina (4+6)
2. Explain extra ocular muscles, its origin insertion, nerve supply, action and its applied anatomy. (2+2+2+3+1)

SHORT ESSAY (Answer any three) **3 X 5 = 15 Marks**

3. Describe the Visual pathway and its lesions.
4. Ciliary ganglion.
5. Describe the components of Lacrimal apparatus.
6. Describe the structure and function of Vitreous humor.
7. Describe the microscopic structure of Cornea

SHORT ANSWERS (Answer any five) **5 X 3 = 15 Marks**

8. Illustrate the Histology of Optic nerve
9. List the derivatives of Optic cup
10. Eyelid glands.
11. Name the types of glands and give one example for each.
12. List the structures passing through superior orbital fissure.
13. Name the types of Conjunctiva
14. How is aqueous humor produced?

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. List the extra ocular muscles with its innervation , actions and effect of paralysis .
2. Trace the accomodation reflex pathway. Explain the changes during accomodation

SHORT ESSAY (Answer any three) **3 X 5 = 15 Marks**

3. Describe hypermetropia & its correction
4. Describe night blindness
5. Describe color blindness
6. Describe the factors affecting transparency of lens
7. List the composition and functions of aqueous humor

SHORT ANSWERS (Answer any five) **5 X 3 = 15 Marks**

8. Describe sympathetic effect on eye
9. List the functions of cornea
10. Give the cause for bitemporal hemianopia
11. Name the factors that affect visual acuity
12. What is blind spot
13. Draw a neat labeled diagram of cones
14. List the areas in visual cortex & mention its functions

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Time: 3 Hrs. **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 **2 X 10 = 20 Marks**

1. Draw a neat labelled diagram of the bacterial cell. Describe the structure, types, functions and demonstration methods of flagella.(3+3+4)
2. Name the free living amoebae. Describe the source, risk factors, clinical features and laboratory diagnosis of Acanthamoeba keratitis. (3+1+1+2+3)

SHORT ESSAY. (Answer any three) **3 X 5 = 15Marks**

3. Describe the working principle of Autoclave with a diagram. List the sterilization controls used.
4. Name the causative agents of Trachoma. Describe the modes of transmission and lab diagnosis of Trachoma.
5. Biomedical waste management
6. Gram Staining : methods and uses.
7 .Standard precautions

SHORT ANSWERS (Answer any five) **5 X 3 = 15 Marks**

8. Name three motile organisms
9. Name three methods of sterilizing critical items
10. Enumerate three agents causing Dacrocystitis
11. Enumerate three agents causing infections of the eye in HIV patients.
12. List 6 personal protective equipment
13. Name any three antibiotic susceptibility testing methods.
14. Name three cell wall acting antibiotics

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. Explain the biochemical composition of cornea. Add a note on corneal metabolism.
2. Describe the chemistry, RDA and biochemical role of Vit A in vision. Add a note on deficiency manifestations of Vit A.

SHORT ESSAY (Answer any three) **3 X 5 = 15 Marks**

3. Describe the structure and functions of Retina.
4. Describe the composition and metabolism of lens.
5. Write the composition and functions of aqueous humour.
6. Write the composition and functions of tear film.
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. List any three irrigating solutions. Mention the uses of irrigating solutions.
10. Mention any three functions of glutathione
11. Mention three muscle proteins and their functions
12. Mention any three plasma proteins and their functions
13. What is glaucoma?
14. Mention the biochemical functions of acetylcholine

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Time : 3 Hrs. **[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. Describe the optics in an Aphakic eye. How do you correct Aphakia.
2. With the help of a diagram state the position of cardinal points on schematic eye of Gull strand. What is Reduced eye of Donder?

SHORT ESSAY (Answer any 10 questions) **10 x 5 = 50 Marks**

3. Describe Mypoia. Explain etiology, clinical features and treatment of Myopia.
4. Decentring of Lenses.
5. Explain the process of Polarization with the help of diagrams and its clinical applications.
6. Define and describe different axes and angles present in human eye.
7. Define Retinoscopy and Explain the types of Retinoscopy.
8. Write a note on Total internal reflection.
9. Write a note on Cycloplegic drugs.
10. Describe in detail about Progressive addition lenses.
11. How do you calculate Spherical Equivalent.
12. Describe the method of " Assessment of Amplitude of Accomodation" by measuring NPA.
13. Explain the steps of Streak Retinoscopy.
14. What is JCC? Mention its uses.

SHORT ANSWERS (Answer any 10 questions) **10 x 3 = 30 Marks**

15. Refraction at a irregular surface.
16. Images formed by cylindrical lenses.
17. Principle focus of lens.
18. Observation and interpretation of Retinoscopy.
19. Methods of measurement of Amplitude of convergence.
20. Correction of Aphakia.
21. Concave lens.
22. Refractive condition in Keratoconus.
23. State Snell's law of Refraction.
24. Thomas Young experiment to explain interference.
25. Applications of Retroreflection.
26. Slab-off prism.

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