Rajiv Gandhi University of Health Sciences, Karnataka

I Year B.Sc. Optometry Degree Examination - SEP-2018

Time: Three Hours **Max. Marks: 80 Marks**

Basic Biochemistry Ocular Biochemistry and Nutrition
Q.P. CODE: 3101

Section A – Basic Biochemistry (40 Marks)

Revised Scheme - 3

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

(Note : Both QP Codes 3101 and 3102 are to be answered within total duration of 3 hours)

LONG ESSAYS (Answer any Two) **2 x 10 = 20 Marks**

1. Define enzymes. Describe the classification of enzymes with examples.
2. What is Urea? Describe the synthesis of Urea.
3. Describe the process of aerobic glycolysis and write a note on its energetics.

SHORT ESSAYS (Answer any Two) **2 x 5 = 10 Marks**

4. Glycosaminoglycans.
5. Functions of Phospholipids.
6. Name the buffer system of body fluids. Explain any one of them.

SHORT ANSWERS **5 x 2 = 10 Marks**

7. Name the Ketone bodies
8. Name the nucleic acids and their biomedical importance.
9. Name any two diagnostically important enzymes.
10. What are antioxidants? Give two examples.
11. What are uncouplers? Give two examples.

I Year B.Sc. Optometry Degree Examination - SEP-2018

Time: Three Hours **Max. Marks: 80 Marks**

Basic Biochemistry Ocular Biochemistry and Nutrition
Q.P. CODE: 3102

Section B – Ocular Biochemistry and Nutrition (40 Marks)

Revised Scheme - 3

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

(Note : Both QP Codes 3101 and 3102 are to be answered within total duration of 3 hours)

LONG ESSAYS (Answer any Two) **2 x 10 = 20 Marks**

1. Write Sources, RDA, and Functions of Vitamin A. Describe Wald's Visual Cycle.
2. Write briefly on Composition and functions of Aqueous humor. Add a note on Glaucoma.
3. With the help of food guide Pyramid explain energy expenditure in human body.

SHORT ESSAYS (Answer any Two) **2 x 5 = 10 Marks**

4. Write briefly on sources and functions of Proteins.
5. Write a note on Retinal Functions.
6. What is Pump-leak Mechanism?

SHORT ANSWERS **5 x 2 = 10 Marks**

7. Define Calorie.
8. Hyalocytes.
9. Low birth weight.
10. Eye disorders associated with Measles.
11. Essential amino acids.

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I Year B.Sc. Optometry Degree Examination - MARCH 2018

Time: Three Hours **Max. Marks: 80**

Marks

General Anatomy and Physiology, Ocular Anatomy and Physiology
Section A: General Anatomy and Physiology (40 Marks)
(Revised Scheme – 3)
Q.P. CODE: 3103

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

(Note: Both QP Codes 3103 and 3104 are to be answered within total duration of 3 hours)

LONG ESSAYS (Answer any Two) **2 x 10 = 20 Marks**

1. Classify white blood cells, and describe the morphology and functions of these cells.
2. Discuss the importance of blood groups in the transfusion of blood.
3. With a neat diagram describe the digestive system of the body.

SHORT ESSAYS (Answer any Two) **2 x 5 = 10 Marks**

4. Explain the negative feedback mechanism of hormone control.
5. Anatomy of the pancreas with a neat diagram.
6. List out differences between arteries and veins.

SHORT ANSWERS **5 x 2 = 10 Marks**

7. ESR
8. Vitamin K
9. Systole
10. Duodenum
11. Large intestine

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I Year B.Sc. Optometry Degree Examination - SEP-2018

Time: Three Hours **Max. Marks: 80**

Marks

General Anatomy and Physiology, Ocular Anatomy and Physiology
Section B: Ocular Anatomy and Physiology (40 Marks)
(Revised Scheme – 3)
Q.P. CODE: 3104

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

(Note: Both QP Codes 3103 and 3104 are to be answered within total duration of 3 hours)

LONG ESSAYS (Answer any Two) **2 x 10 = 20 Marks**

1. Describe the theories of colour vision.
2. What are the different tests performed for tear film adequacy?
3. Anatomical consideration of aqueous outflow system.

SHORT ESSAYS (Answer any Two) **2 x 5 = 10 Marks**

4. Brief on anterior layer of cornea.
5. Write on pathway of light reflex.
6. Write a short note on accommodation and how it is related to pupil size.

SHORT ANSWERS **5 x 2 = 10 Marks**

7. Tear film
8. Protanopia
9. Convergence
10. Conjunctiva
11. Optic tract

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I Year B.Sc. Optometry Degree Examination - MARCH - 2018

Time: Three Hours **Max. Marks: 80 Marks**

Physical and Principles of Lighting, Geometric Optics
Section A: Physical and Principles of Lighting (40 Marks)
(Revised Scheme – 3)
Q.P. CODE: 3105

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

(Note: Both QP Codes 3105 and 3106 are to be answered within total duration of 3 hours)

LONG ESSAYS (Answer any Two) **2 x 10 = 20 Marks**

1. Define Simple harmonic motion. Give two examples for the same. Obtain the expression for the total energy of a body executing simple harmonic motion.
2. Write the concept of lighting design.
3. Explain the construction and working of Michelson Interferometer.

SHORT ESSAYS (Answer any Two) **2 x 5 = 10 Marks**

4. What is optical activity? State Biot's laws of optical rotation. Define the two kinds of substances exhibiting optical activity.
5. Explain with relevant theory 'Raman effect'
6. What is the radius of the first half period zone in a zone plate behaving like a convex lens of focal length 0.6m for light of wave length 600 nm?

SHORT ANSWERS **5 x 2 = 10 Marks**

7. Explain applications of color of thin films.
8. What is a polaroid ? Mention two of its applications.
9. Distinguish between dispersive power and resolving power of a grating.
10. What is wave theory of light?
11. Write about rectilinear propagation of light.

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I Year B.Sc. Optometry Degree Examination - MARCH - 2018

Time: Three Hours **Max. Marks: 80 Marks**

Physical and Principles of Lighting, Geometric Optics
Section B: Geometric Optics (40 Marks)
(Revised Scheme – 3)
Q.P. CODE: 3106

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

(Note: Both QP Codes 3105 and 3106 are to be answered within total duration of 3 hours)

LONG ESSAYS (Answer any Two) **2 x 10 = 20 Marks**

1. Deduce the prism formula and the expression for the deviation produced by a thin prism?
2. Obtain the expression for equivalent focal length of two lenses kept (a) in contact. (b) Separated.
3. Explain the principle of a laser. Describe a He-Ne laser. Mention one use of the same

SHORT ESSAYS (Answer any Two) **2 x 5 = 10 Marks**

4. What is dispersive power of a prism? Obtain the condition for combination of two thin prisms to produce dispersion without deviation.
5. Light of wavelength 4800Å is incident on a surface of photo emissive metal of work function 1.05 eV. Calculate (I) energy of the incident photon and (ii) the maximum kinetic energy of the ejected photoelectrons. $h=6.625 \times 10^{-34}$ J.s. $e=1.6 \times 10^{-19}$C. $c=3x10^{8}m.s^{-1}$.
6. Obtain an expression for the refractive index of a substance by normal shift method.

SHORT ANSWERS **5 x 2 = 10 Marks**

7. What is an ophthalmic prism? Mention its use in optometry.
8. Write the expressions for resolving power and dispersive power of a grating, explaining the symbols.
9. Mention the uses of spherical mirrors.
10. State the conditions for total internal reflection.
11. What is the significance of velocity of light?

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