Rajiv Gandhi University of Health Sciences, Karnataka

I Year B.Sc. Optometry Degree Examination - 28-Dec-2020

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

Basic Biochemistry and Ocular Biochemistry and Nutrition
Section A – Basic Biochemistry (40 Marks)
(Revised Scheme – 3)
Q.P. CODE: 3101

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. TCA – cycle
2. What are fat soluble vitamins? Write a note on the structure and functions of any three of them.
3. What is the normal blood urea level? Discuss the reactions of urea cycle. Add a note on its regulation.

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

4. Clinical importance of enzymes
5. Rhodopsin – role in vision
6. Biochemical function of calcium

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

7. Transamination
8. Substrate level phosphorylation
9. Free radicals
10. Write any two fat soluble vitamins.
11. Hyaluronic acid

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I Year B.Sc. Optometry Degree Examination - 28-Dec-2020

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

Basic Biochemistry and Ocular Biochemistry and Nutrition
Section B: Ocular Biochemistry and Nutrition (40 Marks)
(Revised Scheme – 3)
Q.P. CODE: 3102

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. What is balance diet? Plan a normal diet for a 60kg man working at a construction site (moderate physical activity).
2. Explain the composition of each layer & function of tear film with a neat labelled diagram.
3. Define trace elements (Micro Minerals). Explain the sources, RDA, functions, absorption and transport of Iron.

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

4. Sorbitol Pathway.
5. Differences in biochemical composition of aqueous humor and vitreous humor.
6. Define Basal Metabolic Rate. Factors affecting BMR.

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

7. Nitrogen balance.
8. What are the functions of retina?
9. Sources and RDA of Vitamin A.
10. Specific Dynamic Action (SDA).
11. Mention the coenzyme form of any two vitamin B complex.

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I Year B.Sc. Optometry Degree Examination - 30-Dec-2020

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. What is cardiac output? Mention the factors controlling cardiac output.
2. Describe the mechanics of Respiration.
3. Draw neat labeled diagram of the digestive system and describe stomach in brief.

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

4. Thyroid gland
5. Types of connective tissue
6. Reflex arc and reflex action

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

7. Endoplasmic reticulum
8. Fertilization
9. Clonus
10. Cyanosis
11. Gall bladder

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Rajiv Gandhi University of Health Sciences, Karnataka

I Year B.Sc. Optometry Degree Examination - 30-Dec-2020

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. Explain about the anatomy of retina with labelled diagram.
2. Mechanics of action of extra ocular muscles. What are yoke muscles, give examples? What are the fundamental laws governing ocular motility.
3. Write on anatomy of crystalline lens, factors affecting its transparency and changes seen in ageing lens.

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

4. Parts of conjunctiva.
5. Lacrimal apparatus.
6. Structure of upper eyelid.

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

7. Cloquet's canal.
8. LPS muscle.
9. Function of tear film.
10. Trabecular meshwork.
11. Miosis and mydriasis.

Rajiv Gandhi University of Health Sciences, Karnataka

I Year B.Sc. Optometry Degree Examination - 28-Dec-2020

Time: Three Hours **Max. Marks: 100 Marks**

BASIC BIOCHEMISTRY AND NUTRITION (RS-4)

Q.P. CODE: 3340

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

LONG ESSAYS (Second Question Choice) **2 x 10 = 20 Marks**

1. Describe the reactions and steps involved in TCA cycle and write its energetics.
2. Write the sources, chemistry, Co-enzyme form, functions and deficiency of Thiamine.

   Or

   List out the various fluid buffers in the body. Explain the buffer systems involved in the regulation of blood pH.

SHORT ESSAYS (Question No 5 & 10 choice) **10 x 5 = 50 Marks**

3. What are co-enzymes? Give examples.
4. Classify carbohydrates giving examples for each.
5. State the deficiency manifestations of Vitamin A.

   Or

   Collagen.
6. What are ketone bodies? What about Ketogenesis.
7. Functions of proteins.
8. Describe the structure of DNA.
9. Describe the sources, requirements and functions of Phosphorus.
10. Significance of HMP shunt pathway.

    Or

    Describe the organization of ETC with diagram. Indicate the ATP sites.
11. BMR.
12. Deamination.

SHORT ANSWER (Question No 15 & 20 choice) **10 x 3 = 30 Marks**

13. Name the different cell organelles. Mention any two functions of cell membrane.
14. What are the degradative products of cholesterol?
15. Respiratory quotient (RQ)

    Or

    Any three function of copper in the body.
16. Pellagra.
17. What is the normal blood urea level? Write the clinical significance.
18. Name the different aeromatic amino acids.
19. Name any three diagnostic enzymes with their normal levels.
20. What are free radicals? Give two examples.

    Or

    Name the different Lens proteins.
21. Pernicious anemia.
22. Essential fatty acids.

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I Year B.Sc. Optometry Degree Examination - 30-Dec-2020

Time: Three Hours **Max. Marks: 100 Marks**

GENERAL ANATOMY AND GENERAL PHYSIOLOGY (RS-4)
Section A: GENERAL ANATOMY– (50 Marks)
Q.P. CODE: 3341

Your answers should be specific to the questions asked
Draw neat, labeled diagrams wherever necessary
(Note: Both QP Codes 3341 and 3342 are to be answered within total duration of 3 hours)

LONG ESSAYS (First Question Choice) **1 x 10 = 10 Marks**

1. Enumerate the systems of the body. Mention the parts of digestive system. Explain the anatomy of liver and gall bladder.

   Or

   Name the division of nervous system. Discuss in detail location, coverings, parts, lobes and blood supply of brain.

SHORT ESSAYS (Question No 5 choice) **5 x 5 = 25 Marks**

2. Mention parts of female reproductive system. Briefly write on uterus.
3. Thyroid gland-location, relation, structure and blood supply.
4. Classify epithelial tissue, describe the stratified squamous epithelium.
5. What is Skeleton? Enumerate the types and bones of skeleton.

   Or

   Define joints. Classify joints with examples.

6. Brief note on chambers of hart and their connection.

SHORT ANSWER (Question No. 10 choice) **5 x 3 = 15 Marks**

7. Difference between skeletal muscle and cardiac muscle.
8. Cartilages of larynx.
9. Define sense organ and receptors associated with them.
10. Branches of arch of aorta

    Or

    Origin and termination of inferior vena cava.

11. Location, size and shape of heart.

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I Year B.Sc. Optometry Degree Examination - 30-Dec-2020

Time: Three Hours **Max. Marks: 100 Marks**

GENERAL ANATOMY AND GENERAL PHYSIOLOGY (RS-4)
Section B: GENERAL PHYSIOLOGY– (50 Marks)
Q.P. CODE: 3342

Your answers should be specific to the questions asked
Draw neat, labeled diagrams wherever necessary
(Note: Both QP Codes 3341 and 3342 are to be answered within total duration of 3 hours)

LONG ESSAYS (First Question Choice) **1 x 10 = 10 Marks**

1. Explain oxygen transport from the lungs to tissues.
   Or
   Define cardiac output. Describe the various factors regulating cardiac output.

SHORT ESSAYS (Question No 5 choice) **5 x 5 = 25 Marks**

2. Differences between UMN and LMN lesions.
3. With a neat labelled diagram explain the pyramidal tracts. Add a note on its functions.
4. Explain the different phases of Gastric secretion.
5. Describe the steps involved in the synthesis of thyroid hormones.
   Or
   Describe the short –term regulation of Blood pressure.
6. Rh factor and its importance.

SHORT ANSWER (Question No. 10 choice) **5 x 3 = 15 Marks**

7. Mechanisms of heat loss.
8. Surfactant.
9. Functions of Saliva.
10. Artificial Kidney.
    Or
    Functions of middle ear.
11. Addison's disease.

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