

SRI DEVARAJ URS ACADEMY OF HIGHER EDUCATION & RESEARCH

(A DEEMED TO BE UNIVERSITY)

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

February – 2019 Examination

B.Sc. Medical Laboratory Technology (MLT)

Time : 2.30 Hrs.

[Max. Marks : 80]

SUBJECT : BIOCHEMISTRY - I

Q.P Code : J3031

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

Long Essay

2X10=20 Marks

1. Describe the chemistry, dietary sources, Recommended Daily Allowance, Biochemical functions and deficiency manifestations of Vitamin D. (1+1+1+4+3)
2. Define Proteins. Classify them with suitable examples. (2+8)

Short Essay(Answer Any Six)

6X5=30 Marks

3. Describe the structure and functions of Mitochondria.
4. Describe the Structure of DNA with neat labeled diagram.
5. What are Phospholipids? Classify them with suitable examples and important functions. (1+4)
6. Briefly describe the Fluid Mosaic model of plasma membrane with a neat labelled diagram. (3+2)
7. What are dietary fibers? Give examples. Describe the beneficiary effect & disadvantage of dietary fibers. (1+1+2+1)
8. Define lipoproteins. Classify lipoproteins with their functions. (1+2+2)
9. What are Biologically Important Peptides? Give four examples and their biological roles. (1+4)
10. What are Glycosaminoglycans? List any four Glycosaminoglycans with their biological significance. (1+4)

Short Answers(Answer Any Ten)

10X3=30 Marks

11. Benedicts test – Principle & composition of Benedict reagent.
12. What is coenzyme? Give two examples
13. Define & classify Immunoglobulins.
14. Folate Trap.
15. Write the active form of : 1) Thiamine 2) Niacin 3) Pyridoxine
16. Mention two therapeutic enzymes with their applications.
17. Define essential amino acids and Name them.
18. What is Protein Energy Malnutrition (PEM)? Classify PEM.
19. Definition & types of Rancidity.
20. Write the deficiency diseases of: i) Ascorbic acid ii) Thiamine iii) Vit A.
21. List any three factors affecting enzyme activity.
22. Give any three functions of Albumin.

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SUBJECT : BIOCHEMISTRY - II

Q.P Code : J3032

Your answers should be specific to the questions asked.

Draw neat labeled diagrams wherever necessary.

Long Essay

2X10=20 Marks

1. Give the Biological reference range of Total Bilirubin & Direct Bilirubin. Describe in detail the steps of synthesis and degradation of bilirubin in the body. (1+1+4+4)
2. Define β -oxidation. Explain the β -oxidation of Palmitic acid. Add a note on its energetics. (1+7+2)

Short Essay(Answer Any Six)

6X5=30 Marks

3. Describe the steps of urea cycle.
4. Define Lipoproteins. Classify them & write their functions. (1+4)
5. Explain the chemiosmotic theory of oxidative phosphorylation.
6. Enumerate any five Glycogen storage diseases with their enzyme defect.
7. Write the steps of TCA cycle
8. Describe the transport, storage and functions of iron. (2+1+2)
9. Describe the digestion and absorption of proteins
10. Define Jaundice. Classify jaundice & mention the causes for each type of jaundice. (1+2+2)

Short Answers(Answer Any Ten)

10X3=30 Marks

11. What is Cori's cycle? Mention its clinical significance?
12. List any three compounds derived from Cholesterol.
13. List any three hormones that regulate blood glucose levels.
14. Glucose tolerance test (GTT): Indications, Procedure.
15. Define oxidative phosphorylation and substrate level phosphorylation & give one example for each.
16. What is Alkaptonuria? Mention the enzyme defect.
17. What are high energy compounds? Give four examples
18. Write the enzyme defect and any 2 clinical features of Phenylketonuria
19. Write any two functions of Iodine
20. Mention the sources and any two functions of Selenium
21. What are lipotropic factors? Give 2 examples.
22. Write the reference range for: (1) serum Calcium (2) serum Magnesium (3) serum Phosphorous

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SUBJECT : BIOCHEMISTRY - III

Q.P Code : J3033

Your answers should be specific to the questions asked.

Draw neat labeled diagrams wherever necessary.

Long Essay

2X10=20 Marks

1. Describe in detail the automation of analytical process in the clinical Biochemistry laboratory.
2. Write the normal pH of blood & explain the various mechanisms involved in regulation of Blood pH. (2+8)

Short Essay(Answer Any Six)

6X5=30 Marks

3. Rothera's test: Principle, procedure & significance.
4. Give an account on Principle, different types and applications of Electrophoresis.
5. Describe the Instructions for collecting fasting blood sample & 24 hours urine sample.
6. Mention the advantages and applications of ELISA.
7. Describe the Preparation & interpretation of L J Chart.
8. Describe the similarities, advantage, disadvantage between the colorimeter & spectrophotometer.
9. Describe the various steps of phlebotomy.
10. Define Jaundice. Classify jaundice and mention one cause for each type of jaundice.

Short Answers(Answer Any Ten)

10X3=30 Marks

11. Microalbuminuria.
12. Define Preanalytical errors and mention any two causes.
13. Define clearance test. Name the various clearance test
14. PH Meter: Principle and Application.
15. Biochemical changes in hyperthyroidism.
16. What is anion gap? Mention 2 causes for increased anion gap.
17. Heat & acetic acid test- principle & procedure.
18. Vandenberg test: Principle & importance.
19. List the parameters in Thyroid Function test.
20. Diagnostic enzymes of acute pancreatitis.
21. Benedicts test principle.
22. Write the reference range for (1) Serum Urea (2) SerumCratinine (3)Serum Uric acid.