



SRI DEVARAJ URS ACADEMY OF HIGHER EDUCATION & RESEARCH

(A DEEMED TO BE UNIVERSITY)

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

March 2025 Examination

B.Sc. Medical Laboratory Technology (MLT)

Time: 2.30 Hrs.

[Max. Marks: 80]

Subject: BIOCHEMISTRY - I

Q.P Code: K3031

Your answers should be specific to the questions asked.

Draw neat labeled diagrams wherever necessary.

Long Essay

2x10=20

1. Describe the chemistry, dietary sources, Recommended Daily Allowance, Biochemical functions and deficiency manifestations of Vitamin A. (1+1+1+4+3)
2. Define Enzymes. Classify them as per IUB system with one example from each class. Add a note on Coenzymes with 2 examples. (1+6+3)

Short Essay

6X5=30

- 3 Define Lipids. Classify lipids with examples. (1+4)
- 4 What are Glycosaminoglycans? List any four Glycosaminoglycans with their biological significance (1+4)
- 5 What are dietary fibers? Give examples. Describe the beneficiary effect & disadvantage of dietary fibers. (1+1+2+1)
- 6 Describe the different types of RNA. List their functions
- 7 Define Polysaccharides. Classify them with suitable examples and give their biomedical importance (1+4)
- 8 Define Mutarotation and mention the cause. (2+1+2)

Short Answers

10X3=30

- 9 List 3 biological functions of Vitamin C.
- 10 Define essential amino acids and Name them
- 11 Define respiratory quotient. Write the RQ of carbohydrates, lipids and proteins.
- 12 What is active transport? Give an example.
- 13 Define Balanced Diet.
- 14 Mention two therapeutic enzymes with their applications
- 15 Define BMR. Mention any 4 factors affecting BMR
- 16 Define Anomers and Epimers. Give examples
- 17 Name 6 abnormal constituents of urine
- 18 What are dietary fibers? Give two examples

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B.Sc. Allied Health Sciences Second Year Semester-II)

March 2025 Examination

B.Sc. Medical Laboratory Technology (MLT)

Time: 2.30 Hrs.

[Max. Marks: 80]

Subject : BIOCHEMISTRY - II

Q.P Code: K3032

Your answers should be specific to the questions asked.

Draw neat labeled diagrams wherever necessary.

Long Essay

2X10=20 Marks

1. Define Glycolysis. How is glucose converted to pyruvate? Add a note on its energetics.
2. List the sources of ammonia. Explain how ammonia is detoxified in the body. Add a note on disorders of urea cycle.

Short Essay

6X5=30 Marks

3. Define Gluconeogenesis. Name the substrates for Gluconeogenesis & give its significance
4. Define Fatty Liver. Mention the causes of fatty liver. Add a note on lipotropic factors.
5. Explain the, sources & biochemical functions of Copper & zinc.
6. Describe the transport, storage and functions of iron.
7. Describe the digestion & absorption of Carbohydrates.
8. Briefly explain the synthesis of Creatinine. Mention the normal serum level and list the causes for increased serum levels of creatinine.

Short Answers

10X3=30 Marks

- 9 List any three Biological important compounds derived from Cholesterol
- 10 Write any three biochemical functions of Calcium
- 11 Vandenberg Test.
- 12 Define substrate level Phosphorylation. Give two examples
- 13 What is ketosis? Give two causes for ketoacidosis.
- 14 Mention normal levels of serum calcium. List any two factors affecting the absorption of calcium
- 15 List any 3 glycogen storage disorders with enzyme defect
- 16 Define Gout. Mention the two types of Gout.
- 17 Write three causes for Hepatic jaundice.
- 18 What is Cori's cycle? Mention its clinical significance?

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

March 2025 Examination

B.Sc. Medical Laboratory Technology (MLT)

Time: 2.30 Hrs.

[Max. Marks : 80]

Subject : BIOCHEMISTRY - III

Q.P Code: K3033

Your answers should be specific to the questions asked.

Draw neat labeled diagrams wherever necessary.

Long Essay

2X10=20 Marks

1. Give an account on Principle, different types, instrumentation, procedure and applications of Electrophoresis.
2. Write the normal pH of blood & explain the Blood Buffers & renal mechanisms involved in regulation of Blood pH.

Short Essay

6X5=30 Marks

3. Mention the advantages and applications of ELISA.
4. Describe in detail the pH meter principle, instrumentation, applications
5. Define clearance test. Explain the various types of clearance tests.
6. Radio Immuno Assay: principle, applications.
7. Define Mean, Median, Mode, Standard Deviation (SD) & Coefficient of variation (% CV).
8. Give an account on Principle, different types and applications of Chromatography

Short Answers

10X3=30 Marks

- 9 Define Anion gap. Mention the reference interval of anion gap.
- 10 Biochemical changes in Hypothyroidism.
- 11 Name any six conditions where Serum Urea is increased.
- 12 Define Accuracy & Precision.
- 13 Mention the advantage of spectrophotometer compared to colorimeter.
- 14 Creatinine clearance test.
- 15 Mention two enzymes which help in diagnosing the Pancreatic disorder
- 16 List the parameters in lipid profile.
- 17 Vandenberg Test.
- 18 Give the Biological reference range of (1)Albumin (2) Globulin (3) A:G ratio

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