



SRI DEVARAJ URS ACADEMY OF HIGHER EDUCATION & RESEARCH

(A DEEMED TO BE UNIVERSITY)

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

March / April 2026 Examination

B.Sc. Medical Laboratory Technology (MLT)

Time: 2 hrs 30 mins.

[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. Define Lipids. Classify them with suitable examples & write their biomedical importance. **(1+7+2)**
2. Define Cell. With a neat labelled diagram mention the subcellular components with their functions. **(2+8)**

Short Essay **6X5=30**

- 3 Write the sources, daily requirement and biochemical functions of Thiamine **(1+1+3)**
- 4 Write a short note on Sickle cell disease
- 5 Define Enzymes. Classify enzymes with example **(1+4)**
- 6 Define Mucopolysaccharides. Classify them with suitable examples and biomedical importance **(1+4)**
- 7 With a neat labelled diagram explain the structure of t- RNA
- 8 Describe the secondary structure of proteins

Short Answers **10X3=30**

- 9 Define essential Fatty acids and name them
- 10 Benedicts test: Principle, Composition of Benedicts reagent
- 11 Define Nucleotide & Nucleoside with examples
- 12 What is Isoelectric pH?
- 13 Anomerism and Epimerism with examples.
- 14 Write the active form of : 1) Thiamine 2)Niacin 3) Pyridoxine
- 15 Define denaturation. Mention the factors causing denaturation of proteins
- 16 Define Isoenzymes. Give two examples.
- 17 Define Balanced Diet.
- 18 Heat & acetic acid test: Principle & significance

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Subject : BIOCHEMISTRY - II

Q.P Code: K3032

Your answers should be specific to the questions asked.

Draw neat labeled diagrams wherever necessary.

I. Long Essay

2X10=20 Marks

1. Explain the steps of Glycolysis. Add a note on its energetics and regulation.
2. Define β -oxidation. Explain the β - oxidation of Palmitic acid. Add a note on its energetics.

II. Short Essay

6X5=30 Marks

3. Define Jaundice. Classify different types of jaundice based on serum and urine investigations
4. What is meant by detoxification? Give an account of various detoxification processes.
5. Define Fatty Liver. Mention the causes of fatty liver. Add a note on lipotropic factors.
6. Explain the steps of Urea Cycle. Add a note on its Biomedical importance.
7. Describe the transport, storage and functions of iron.
8. What are Porphyrias? How are they classified? Name the enzyme defect and biochemical findings in any one of the porphyrias.

III. Short Answers

10X3=30 Marks

9. What is Pompe's disease? Mention its clinical features.
10. Define clearance test. List the various clearance test
11. What is ketosis? Give two causes for ketoacidosis.
12. Define Gluconeogenesis. List four substrates for Gluconeogenesis
13. Mention the sources and any two functions of Selenium
14. Mention the significance of HMP shunt pathway
15. Write the biological reference interval for:
(1) serum Sodium (2) serum Magnesium (3) serum Phosphorous.
16. Write the biological reference interval for Fasting and Post Prandial blood glucose.
List the hormones regulating blood sugar.
17. Mention normal levels of serum calcium. List any two factors affecting the absorption of calcium
18. Wilsons disease

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[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.

I. Long Essay

2X10=20 Marks

1. Write the principle, instrumentation, procedure, formula and applications of Colorimeter.
2. Write the functions of Kidney. Classify Renal function tests. Explain the laboratory tests to assess glomerular function.

II. Short Essay

6X5=30 Marks

3. Write the biological reference interval of blood pH. Mention any three causes of metabolic and respiratory acidosis.
4. Define Jaundice. Classify different types of jaundice based on blood and urine investigations.
5. Define Anion Gap. PH. Write the biological reference interval of anion Gap. Mention the causes of High Anion gap and Normal anion gap metabolic acidosis.
6. Write the functions of Thyroid Hormone. Brief out Hypothyroidism and Hyperthyroidism.
7. Write any five difference between Internal Quality Control and External Quality Control
8. Define anticoagulant. Write in detail the different types of anticoagulant used in the laboratory.

III. Short Answers

10X3=30 Marks

9. Mention the precautions to be taken while transferring the samples to the lab for Arterial Blood Gas analysis
10. Define Clearance Test. Mention the types and write the formula to calculate clearance tests
11. Write the principle of Ion selective electrode.
12. Define Accuracy and Precision.
13. ELISA principle
14. Benedict's Test: Principle and Application.
15. Instructions for collecting fasting blood sample.
16. Name the bile Salts and Bile Pigments. Mention the tests to identify these constituents in urine
17. Write the principle and applications of Chromatography
18. Mention the various types of variables in the laboratory with 2 examples each.

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