SRI DEVARAJ URS ACADEMY OF HIGHER EDUCATION & RESEARCH

(A DEEMED TO BE UNIVERSITY)

B.Sc. Medical Laboratory Technology
Second Year Semester-III
February 2020 Examination

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 C.	**(1+1+1+4+3)**
2.	Define Enzymes. Classify enzymes. Give two examples for each class and the reaction catalyzed by them.	(1+5+4)

Short Essay(Answer Any Six)6X5=30 Marks

3	What are dietary fibers? Give examples. Describe the beneficiary effect & disadvantage of dietary fibers.	(1+1+2+1)
4	With a neat labelled diagram explain the watson& crick model of DNA.	
5	What are Plasma proteins.Write the various functions of Albumin.	(1+4)
6	With a neat labelled diagram explain the Fluid mosaic model.	(2+3)
7	What are Phospholipids? Classify them with suitable examples and important functions.	
8	Define BMR. Describe any six factors affecting BMR. Give any two conditions where BMR is altered.	(1+3+1)
9	Define lipoproteins. Classify lipoproteins with their functions.	(1+2+2)
10	What are Biologically Important Peptides? Give four examples and their biological roles.	(1+4)

Short Answers(Answer Any Ten)10X3=30 Marks

11 Benedicts test – Principle & composition of Benedict reagent.
12 Define Essential fatty acids. Give examples.
13 What is Denaturation? List two factors causing Denaturation.
14 Invert sugar.
15 Define competitive inhibition. Give two examples.
16 Define respiratory quotient. Write the RQ of carbohydrates, lipids and proteins.
17 What are nucleosides and nucleotides?
18 What are the deficiency manifestations of a) Thiamine b) Niacin c) Vit C
19 What is Nitrogen balance? Mention two conditions with positive Nitrogen balance.
20 Mention the pyrimidine bases.
21 What is SDA? Mention its significance.
22 Name the abnormal constituents of urine.

*** * * * ***

SRI DEVARAJ URS ACADEMY OF HIGHER EDUCATION & RESEARCH

(A DEEMED TO BE UNIVERSITY)

B.Sc. Medical Laboratory Technology
Second Year Semester-III
February 2020 Examination

Time : 2.30 Hrs. **[Max. Marks : 80]**

SUBJECT : BIOCHEMISTRY - II

Q.P Code : J3032

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

Long Essay **2 X 10=20 Marks**

1. Explain how uric acid is formed in the body? Add a note on Gout. (6+4)
2. Describe the dietary source, RDA, Biochemical functions & deficiency manifestations of Calcium (2+2+4+2)

Short Essay(Answer Any Six) **6 X 5=30 Marks**

3. Enumerate any five Glycogen storage diseases with their enzyme defect.
4. Explain the, sources & biochemical functions of Copper & zinc (2.5+2.5)
5. Enumerate the different components of Electron Transport Chain (ETC) with a neat labeled diagram
6. Name Ketone bodies. Write the steps of synthesis & utilization of ketone bodies (1+2+2)
7. Briefly explain the synthesis of Creatinine. Mention the normal serum level and list the causes for increased serum levels of creatinine. (3+1+1)
8. Describe the role of Carnitine in β-oxidation of fatty acid.
9. What is Atherosclerosis? Explain pathogenesis and factors contributing to Atherosclerosis. (1+2+2)
10. Describe briefly the digestion and absorption of Proteins.

Short Answers(Answer Any Ten) **10 X 3=30 Marks**

11. Write the reference values for Fasting and Post Prandial blood glucose. List three hormones regulating blood sugar.
12. What is the normal blood urea level? Name any two conditions in which blood urea levels are increased.
13. Vandenberg Test.
14. Lactose intolerance : add a note on enzyme deficient & Name the laboratory test by which lactose can be differentiated by Maltose.
15. Write three biomedical importance of HMP shunt
16. What is Hemosiderosis and hemochromatosis?
17. What is Von Gierke's disease? Mention the enzyme defect and clinical feature.
18. Write the reference range for: (1) serum urea (2) serum uric acid (3) serum creatinine.
19. List any three compounds derived from Cholesterol.
20. What is Alkaptonuria? Mention the enzyme defect.
21. Mention two copper containing enzymes.
22. What are Macrominerals and Microminerals? Give two examples for each.

* * * * *

SRI DEVARAJ URS ACADEMY OF HIGHER EDUCATION & RESEARCH

(A DEEMED TO BE UNIVERSITY)

B.Sc. Medical Laboratory Technology
Second Year Semester-III
February 2020 Examination

Time : 2.30 Hrs. **[Max. Marks : 80]**

SUBJECT : BIOCHEMISTRY - III

Q.P Code : J3033

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

Long Essay **2 X 10 = 20 Marks**

1. Describe Colorimeter with respect to Principle, instrumentation, procedure, Application, advantage & disadvantage. (1+2+3+2+1+1)
2. Classify Renal function tests. Explain the laboratory tests to assess glomerular function. (5+5)

Short Essay(Answer Any Six) **6 X 5 = 30 Marks**

3. Define & mention the three causes of metabolic and respiratory acidosis. (2.5+2.5)
4. Classify Liver Function tests. Explain any four parameters in detail. (2.5+2.5)
5. Define PH. an acid, a base and buffer. Differentiate between strong acid and weak acid. (1+1+1+1+1)
6. Describe the Gastric function tests.
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. (1+4)
9. ELISA: Definition, principle, types, application & advantage (1+1+1+1+1)
10. Preanalytical errors, Analytical and Post analytical errors.

Short Answers(Answer Any Ten) **10 X 3 = 30 Marks**

11. Mention the precautions to be taken while transferring the samples to the lab for Arterial Blood Gas analysis
12. Microalbuminuria.
13. Write the principle of Ion selective electrode.
14. Define Accuracy.
15. Name 3 anticoagulants used for blood collection.
16. Benedict's Test: Principle and Application.
17. Instructions for collecting fasting blood sample.
18. List the parameters in diagnosing pancreatic disorder.
19. Urea clearance test.
20. Define quality control. Mention the various errors in the laboratory.
21. Mention the advantage of spectrophotometer compared to colorimeter.
22. Give the Biological reference range of (1) Total Bilirubin (2) Total Proteins (3) Total cholesterol.

* * * * * *