

SRI DEVARAJ URS ACADEMY OF HIGHER EDUCATION AND RESEARCH
(A Deemed to be University)

Time: 180 Minutes

Max Marks: 80 Marks

MBBS Phase I Supplementary Examination October 2024

Biochemistry Paper I

QP CODE: C1031

Your answer should be specific to the question asked

Draw neat labelled diagrams wherever necessary

Long Essay

10 × 2 = 20 Marks

1. Write the reactions by which Glycine is synthesized & catabolized. Name six important compounds derived from Glycine and indicate their functions. (7+3)
2. Define Glycogenolysis. Describe the reactions of Glycogenolysis. Add a note on its regulation. (1+6+3)

Short Essay

5 × 12 = 60 Marks

3. Define Mutarotation. Give an example. Write the mechanism and clinical significance of Mutarotation. (1+1+2+1)
4. A young man consumes raw eggs to build up his muscle mass. He consumed dozen raw eggs every day for a period of 4-5 weeks, later he developed nausea, vomiting and abdominal pain and got admitted in the emergency department. After taking complete history he was treated symptomatically which relieved him of his symptoms.
 - a) Consumption of excess raw eggs per day for 2-3 weeks leads to deficiency of which vitamin & give the reason for this deficiency
 - b) Write the coenzyme form and two biochemical reaction catalysed by this vitamin. (2+3)
5. Describe the cellular effects of reactive oxygen species.
6. What is conjugation? Give four examples of conjugation reactions. (1+4)
7. Write the procedure for isolation and identification of subcellular organelles. (2.5+2.5)
8. Briefly explain the different types of endocytosis with suitable examples.
9. Write briefly on T- Cell dependent antigen
10. List two Dietary fibers. Give 3 beneficial effects. Dietary fibres decrease risk of colon cancer - Justify this statement (1+3+1)
11. What is meant by denaturation? List the factors causing denaturation and write any four features of Denaturation. (1+2+2)
12. Describe the structural of collagen. Write the any 3 functions of collagen. (2+3)
13. What do you mean by Irreversible inhibition? Give two examples. Comment on the changes in the enzyme kinetics observed with irreversible inhibition. (1+2+2)
14. Describe the role of physician at various levels of Health care system

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Biochemistry Paper II

QP CODE: C1032

Your answer should be specific to the question asked

Draw neat labelled diagrams wherever necessary

Long Essay

10 × 2 = 20 Marks

1. Define PCR. Explain the steps and application of PCR. (1+7+2)
2. What is the normal blood pH? Describe the various mechanisms by which acid- base balance is regulated in the body

Short Essay

5 × 12 = 60 Marks

3. Write the principle, procedure and inference for the following test: a) Rothera's test b) Benzidine test c) Heat coagulation test d) Hay's test e) Fouchet's test (5X1)
4. A new born as soon as delivered is wiped with clean cloth from head to toe and wrapped in a separate clean cloth. In neonates, heat generation by shivering is somewhat limited during the first three months and non-shivering thermogenesis consisting of brown adipose tissue metabolism as a primary means of heat production mediated by uncouplers. a. Define uncouplers.
- b. Give two examples for physiological and chemical uncouplers each.
- c. Explain the biological response by one physiological uncoupler. (1+2+2)
5. Describe in detail the synthesis and degradation of bilirubin in the body. List out any 2 blood investigations done to differentiate between hepatocellular jaundice & obstructive jaundice. (4+1)
6. Describe the steps of purine nucleotide degradation. Add a note on abnormalities due to excessive purine catabolism. (3+2)
7. What is Gout? Mention the clinical manifestations, biochemical alterations and add a note on treatment. (1+1+2+1)
8. Name ketone bodies. Explain the pathophysiology of Ketoacidosis. (1+4)
9. Classify lipoproteins and write their functions. What are apolipoproteins? Mention their significance. (3+1+1)
10. What are Amphipathic lipids? Give examples & biomedical importance of amphipathic lipids. (1+4)
11. What are the different types of DNAs? Describe the structure of B-DNA with a neat labelled diagram. (1+4)
12. Write the Biological reference value of serum sodium. Describe the causes and features of hyponatremia. (1+2+2)
13. Describe the role of oncogenes and antioncogenes in the development of cancer.
14. What is the Biological reference range of Phosphorous. List two conditions and clinical features associated with hyperphosphatemia & hypo phosphatemia (1+4)