

BIOCHEMISTRY

PAPER - II

BIOCHEM/D/13/03/II

Time : 3 hours

Max. Marks : 100

Important instructions:

- Attempt all questions in order.
- Each question carries 10 marks.
- Read the question carefully and answer to the point neatly and legibly.
- Do not leave any blank pages between two answers.
- Indicate the question number correctly for the answer in the margin space.
- Answer all the parts of a single question together.
- Start the answer to a question on a fresh page or leave adequate space between two answers.
- Draw table/diagrams/flowcharts wherever appropriate.

1. What do you understand by water balance? Discuss the homeostatic regulation and various clinical disorders of water balance. 2+(4+4)
2. Discuss the causes and pathophysiology involved in predominantly unconjugated hyperbilirubinemia in a patient. Discuss about laboratory diagnosis of the condition. (3+5)+2
3. List the tests performed for amniotic fluid analysis. Briefly describe the applications and interpretations of the tests. 2+(5+3)
4. What is protein-energy malnutrition (PEM)? Classify PEM. Briefly describe the clinical and biochemical features of each type. 1+2+7
5. What are the tumour markers? Classify them. Give two examples of each type and mention the clinical utilities of each example. 1+2+7
6. What is glycated hemoglobin? How is it estimated? Mention about clinical utility and interpretation of glycated hemoglobin assay. 1+4+(3+2)
7. What is the normal level of sodium and potassium in blood? List the disorders associated with hypernatremia and hyperkalemia. How is hyperkalemia managed? Write the biochemical basis of management of hyperkalemia. 2+4+2+2
8. List three functional and three non functional plasma enzymes. Enumerate the markers of ischemic heart disease. Write biochemical basis of ischemia reperfusion injury. 3+5+2
9. Discuss the tests to assess glomerular and tubular functions of kidney. Write the role of kidney in maintaining acid base balance. 6+4
10. Briefly discuss the following: 3+4+3
 - (a) Preanalytical variable
 - (b) Total quality management
 - (c) ANOVA
