

**Second Year Pharmacy**  
**BIOCHEMISTRY AND CLINICAL PATHOLOGY**  
**(ER20-12T)**

*Time : Three Hours*

*Maximum Marks : 80*

- Note :** i) Attempt any five questions.  
ii) Each question carry equal marks.

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1. a) Differentiate between essential amino acids and non-essential amino acid with examples give structure formulae any four of them. 8
- b) What do you understand by the term carbohydrates? Classify them with specific examples. 8
2. a) Describe any two metabolic disorder of lipid metabolism. 6
- b) Write down structure and biological role of following. 6
- i) Vitamin C
- ii) Vitamin D
- c) Define coenzymes with examples. 4
3. a) Enlist the factors affecting enzyme activity with specific reference to : 8
- i) Temperature
- ii) pH
- b) Write down briefly qualitative biochemical test for carbohydrates. 4
- c) Write down deficiency disease of 4
- i) Vitamin A
- ii) Vitamin K



4. Write note any two of the following: 16
- a) Glycolysis
  - b) Citric acid cycle
  - c)  $\beta$ -oxidation of fatty acids
5. a) Enlist the abnormal constituents of urine. How their detection is useful for diagnostic purpose. 8
- b) Describe the sources function and deficiency disease of sodium. 8
6. a) Describe the important functions of water in the body. 6
- b) Explain electrolyte balance. 6
- c) Give the name of major intracellular and extracellular electrolytes. 4
7. a) Discuss clinical significance of renal function tests and lipid profile tests. 6
- b) Write down Insulin clearance test. 6
- c) Write the normal values of following in males and females. 4
- |                |       |           |  |
|----------------|-------|-----------|--|
| i) Haemoglobin | 12-14 | ii) WBC   |  |
| iii) RBC       | 4-5   | iv) Sugar |  |



8. Write note any four of the following. 16
- a) Clinical significance of ORS
  - b) Pathology of blood
  - c) Structure organization of proteins
  - d) Structure and properties of triglycerides
  - e) Differentiate between DNA and RNA