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**FIRST YEAR (NEW) PHARMACY**  
**BIOCHEMISTRY AND CLINICAL PATHOLOGY**  
 (104)

*Time : Three Hours**Maximum Marks : 80*

- Note :** i) Attempt total *six* questions. Question No.1 is compulsory. From the remaining questions attempt any *five*.
- ii) Illustrate your answer with neat sketches wherever necessary.
- iii) Answer each next main question on a new page. RGPVonline.com

1. Define the following with examples (Any five):  
 2 each
- a) Lipids
  - b) Hyperglycemia
  - c) Iso-Enzymes
  - d) Zwitterion
  - e) Vitamin
  - f) Glycogenolysis
2. Solve any four of the following : 14
- a) Classify carbohydrates with suitable examples.

- b) Give the structure of the following :
  - i) Fructose
  - ii) Dihydroxyacetone
- c) Explain the following :
  - i) Monosaccharides
  - ii) Disaccharides
  - iii) Polysaccharides
- d) Explain Glycolysis.
- e) Describe Molisch Test.

3. Solve any four of the following : 14
- a) What are Proteins? Mention biological functions of Protein. RGPVonline.com
  - b) Describe any two tests of aminoacids.
  - c) Give the structure of the following :
    - i) Glycine
    - ii) Proline
  - d) Explain primary and secondary structure of protein.
  - e) Describe Urea Cycle.
4. Solve any four from the following : 14
- a) Classify lipids with examples.
  - b) Explain saturated and unsaturated fatty acids with examples.

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- c) Define the following under lipids.  
 i) Saponification value  
 ii) Rancidity
- d) Explain  $\beta$ -oxidation of fatty acids.
- e) Describe essential fatty acids
5. Solve any four from the following : 14
- a) Classify the vitamins with examples.
- b) Give the structure, biochemical role and deficiency diseases of nicotinic acid.
- c) Differentiate between enzyme and co-enzyme.
- d) Define Coenzymes. Classify with examples.
- e) Explain the diseases caused due to deficiency of the following vitamins :
- i) Vitamin D RGPVonline.com
- ii) Vitamin B2
6. Solve any four from the following : 14
- a) Explain the following terms :
- i) Osteoporosis  
 ii) Goiter
- b) Explain the physiological functions of phosphorus. Give its deficiency diseases.
- c) Give the dietary source of the following :
- i) Iodine  
 ii) Calcium

- d) Give the physiological functions of Iron.
- e) Describe the regulation of water.
7. Solve any four from the following : 14
- a) Discuss clinical significance of enzyme.
- b) Discuss the mechanism of enzyme action.
- c) Enlist the factors affecting enzyme action. Explain the role of pH and temperature in detail.
- d) Discuss the medicinal significance of enzymes.
- e) Explain the terms:
- i) SGOT
- ii) SGPT RGPVonline.com
8. Solve any four from the following : 14
- a) Name the abnormal constituent of Urine. Give the test for detection of bile pigments in Urine.
- b) Explain the chemical examination of glucose in Urine.
- c) Give the composition and functions of blood.
- d) Explain the characteristics of normal Urine.
- e) Write the following tests :
- i) Barfoed's Test  
 ii) Xanthoproteic Test

