

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 text main question with a new page.

1/ Define the following with examples (any five):

2 each

- a) Amino acids
- b) Diabetes
- c) Hypoglycemia
- d) Essential fatty acids
- e) Deamination
- f) Disaccharides

2. Solve any four of the following:

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- a) Classify carbohydrates with suitable examples.
- b) Give the structure of :
 - i) Fructose
 - ii) Glyceraldehyde
- c) Give two test to identify reducing sugars.
- d) Explain mutarotation.
- e) Draw Citric Acid Cycle.

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3. Solve any four of the following:

- a) Classify amino acids based on structure.
- b) Give the structure of the following:
 - i) Glycine
 - ii) Tyrosine
- c) Describe any two test of proteins.
- d) Describe Urea cycle.
- e) Explain primary and secondary structures of protein.

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4. Solve any four of the following:

- a) Define lipids. Explain the role of lipids in living organism.
- b) Explain the chemical constants for fats.
- c) Define the following under lipids
 - i) Acid value
 - ii) Iodine value
- d) Explain the term steroids.
- e) Explain β -oxidation of fatty acids.

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5. Solve any four of the following:

- a) Define vitamins. Give their classification according to solubilities.
- b) Give the structure, biochemical role and deficiency diseases of ascorbic acid.
- c) Explain the role of vitamin D in human body.
- d) Explain the diseases caused due to deficiency of following vitamins:
 - i) Vitamin B₁
 - ii) Vitamin B₁₂
- e) Discuss in brief any two of the following :
 - i) Osteomalacia
 - ii) Xerophthalmia
 - iii) Pernicious anaemia

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8. Solve any four of the following:

- Explain the role of Potassium in our body.
- Explain the water balance in normal individual.
- Explain the physiological functions of phosphorus. Give its deficiency diseases.
- Give the deficiency diseases of following:
 - Copper
 - Iron
- Discuss in brief the following:
 - Wilson's disease
 - Hyponatremia

Solve any four of the following:

- Define enzymes. Give its properties.
- Classify enzymes with examples.
- Explain the various factors affecting enzyme action.
- Discuss the mechanism of enzyme action.
- Explain the following:
 - Group specificity
 - Optical specificity

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d) Explain the following:

- Diabetes mellitus
 - Polycythemia
- e) Write the following test
- Barfoed's test
 - Xanthoproteic test

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9. Solve any four of the following:

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- Name the abnormal constituent in urine.
- Give the composition and functions of blood.
- Write the chemical examination of bile pigments.