

BIOCHEMISTRY AND CLINICAL PATHOLOGY

Time : 3:00 Hours]

[Maximum Marks : 80

NOTES:

- i) Attempt all parts.
- ii) Students are advised to specially check the Numerical Data of question paper in both versions. If there is any difference in Hindi Translation of any question, the students should answer the question according to the English version.
- iii) Use of Pager and Mobile Phone by the students is not allowed.

PART - A**(Long Questions)**

Attempt any six questions. Each question carries equal marks.

[6 × 5 = 30]

- Q1) Define carbohydrates. Classify carbohydrates with examples.
- Q2) What are proteins? Classify proteins with suitable examples.
- Q3) What are triglycerides? Give properties of triglycerides.
- Q4) What is DNA? Describe structure of DNA (Watson and Crick model)
- Q5) What are enzymes? Discuss the different factors affecting enzymatic actions.
- Q6) Describe Krebs cycle.
- Q7) Write in short the various tests to assess the functions of liver.

PART - B**(Short Questions)**

Attempt any ten questions. Each question carries equal marks.

[10 × 3 = 30]

- Q1) Why is the mitochondria called the powerhouse of the cell?
- Q2) Write a note on qualitative tests for carbohydrates.
- Q3) Write about diseases related to malnutrition of proteins.
- Q4) Give therapeutic and pharmaceutical importance of enzymes.
- Q5) Give the functions and deficiency disorder of cyanocobalamin.
- Q6) Write a note on urea cycle.
- Q7) What are Ketone bodies? Write a note on Ketogenesis.
- Q8) Define and classify minerals with suitable examples.

Q9) Write a note on oral rehydration therapy.

Q10) What is blood? Write functions of blood.

Q11) How sugar is detected in urine?

PART - C

(Objective Type Questions)

Answer all questions. Each question carries equal marks.

[20 × 1 = 20]

Q1) Which of the following monosaccharide is not an aldohexose?

- | | |
|--------------|------------|
| a) fructose | b) glucose |
| c) galactose | d) mannose |

Q2) Which of the following amino acids is not an essential amino acid:

- | | |
|--------------|------------|
| a) valine | b) leucine |
| c) histidine | d) glycine |

Q3) Cholesterol is a

- | | |
|-----------------|---------------|
| a) Phospholipid | b) Steroid |
| c) Fatty acids | d) Glycolipid |

Q4) The major component of biological membrane is.

- | | |
|-----------------|----------------|
| a) steroid | b) fatty acids |
| c) phospholipid | d) glycolipid |

Q5) _____ are the major purine bases found in the nucleic acids.

- | | |
|------------------------|------------|
| a) Adenine | b) Guanine |
| c) Adenine and guanine | d) Thymine |

Q6) Enzymes that split the molecules with water.

- | | |
|--------------|---------------|
| a) Lipase | b) Hydrolases |
| c) Isomerase | d) None |

Q7) Coenzymes are organic but _____ molecules.

- | | |
|-----------------|------------|
| a) Nonprotein | b) Protein |
| c) Both A and B | d) None |

- Q8) The process of blood clotting is initiated by
- | | |
|----------------|-------------------|
| a) fibrinogen | b) thrombin |
| c) prothrombin | d) thromboplastin |
- Q9) Beriberi is caused by the deficiency of _____.
- | | |
|---------------|-------------|
| a) riboflavin | b) niacin |
| c) folic acid | d) thiamine |
- Q10) Phosphoglyceralde hyde is an important intermediate stage in the breakdown of
- | | |
|-------------|----------------|
| a) carotene | b) starch |
| c) glucose | d) haemoglobin |
- Q11) Glycogenesis is the synthesis of _____
- | | |
|-------------|-------------|
| a) glucose | b) glycogen |
| c) glycerol | d) starch |
- Q12) β -oxidation is the breakdown of
- | | |
|-------------------------|-------------------------|
| a) polypeptides | b) longchain fattyacids |
| c) aminoacids and sugar | d) polysaccharides |
- Q13) Which of the following element is required for constriction of muscles.
- | | |
|--------------|--------------|
| a) Ca^{++} | b) Na |
| c) Mg^{++} | d) Mn^{++} |
- Q14) Goitre is caused by the deficiency of
- | | |
|-------------|-------------|
| a) chloride | b) fluorine |
| c) iodine | d) sulphide |
- Q15) An adult human contains about _____ of water.
(60% / 80%)
- Q16) Vaccine is the product of _____.
(biotechnology/biological science)
- Q17) High density lipoprotein cholesterol (HDL cholesterol) is a _____ cholesterol.
(good/bad)
- Q18) Urea is the end product of _____ metabolism.
(Carbohydrate/protein)
- Q19) _____ is a condition where blood appears in the urine.
(Haematuria/Pyuria)
- Q20) _____ is a hereditary disease, also known as bleeding disease.
(Haemophilia/Purpura)