

(6 Pages)

Reg. No. : .....

Code No. : 20716 E      Sub. Code : CACB 11

B.Sc. (CBCS) DEGREE EXAMINATION, APRIL 2023.

First/Third Semester

Biochemistry — Allied - II

CHEMICAL BIOLOGY AND BIOPHYSICAL  
CHEMISTRY

(For those who joined in July 2021 onwards)

Time : Three hours

Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

- Which of the following biomolecules simply refers to as "Staff of life"?  
(a) Lipids                      (b) Proteins  
(c) Vitamins                    (d) Carbohydrates
- Which of the following is a reducing sugar?  
(a) Dihydroxyacetone      (b) Erythulose  
(c) Glucose                      (d) All of the above

- Fats are abundantly found in \_\_\_\_\_  
(a) Reproductive tissue  
(b) Vegetative tissue  
(c) Both (a) and (b)  
(d) None of these
- Hydrolysis of fats by alkalies into fatty acids and glycerol is called  
(a) coagulation              (b) saponification  
(c) suspension                (d) colloidal
- Aminoacids with aliphatic 'R' group are  
(a) Glycine, alanine, leucine  
(b) Serine, threonine, cysteine  
(c) Lysine, arginine, histidine  
(d) Phenylalanine, tyrosine and tryptophan
- The naturally occurring proteins consist of  
(a) D-aminoacids              (b) L-aminoacids  
(c) Both (a) and (b)        (d) None of these



7. Each nucleotide consists of
- (a) Base-sugar-OH
  - (b) Sugar-phosphate
  - (c) Base-sugar-phosphate
  - (d) (Base-sugar-phosphate)
8. Uridine present in RNA is \_\_\_\_\_
- (a) Nucleotides
  - (b) Pyrimidine
  - (c) Purine
  - (d) None of these
9. Separation of different fatty acids can be done by
- (a) counter current chromatography
  - (b) affinity chromatography
  - (c) gas chromatography
  - (d) thin layer chromatography
10. Deficiency of vitamin B<sub>12</sub> causes \_\_\_\_\_
- (a) Megaloblastic anemia
  - (b) Pernicious anemia
  - (c) Sickle cell anemia
  - (d) None

PART B — (5 × 5 = 25 marks)

Answer ALL questions, choosing either (a) or (b).  
Each answer should not exceed 250 words.

11. (a) List the importance of carbohydrates.
- Or
- (b) Write the classification of carbohydrates.
12. (a) Mention the classification of lipids.
- Or
- (b) Write notes on PUFA.
13. (a) Summarize the physical properties of aminoacids.
- Or
- (b) Explain fibrous proteins and their functions.
14. (a) Describe the structure of pyrimidines.
- Or
- (b) Summarize the biological importance of water soluble vitamins.



15. (a) Write the principle and applications of HPLC.

Or

(b) Explain the principle and applications of UV/visible spectroscopy.

PART C — (5 × 8 = 40 marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 600 words.

16. (a) Write an account on heteropolysaccharides.

Or

(b) Explain in detail about homopolysaccharides.

17. (a) Mention the structure and physiological importance of cholesterol.

Or

(b) Comment on phospholipids.

18. (a) Describe the structure and functions of myoglobin.

Or

(b) Draw the structure of haemoglobin and its functions.

19. (a) Explain the structure and importance of vitamin E and vitamin D.

Or

(b) Describe the structure of mRNA.

20. (a) Write the principle and applications of spectrophotometer.

Or

(b) Explain Beer - Lambert's law.

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