

(6 pages)

Reg. No. :

Code No. : 30532 E Sub. Code : CMBO 53

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

Fifth Semester

Botany – Core

BIOCHEMISTRY AND BIOINFORMATICS

(For those who joined in July 2021 – 2022)

Time : Three hours

Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

1. If a bond is made up of a large number of organic compound, then the bond is termed as?
(a) Ionic bond (b) Metallic bond
(c) Covalent bond (d) Dipolar bond
2. Atoms undergo bonding in order to
(a) Attain stability (b) Lose stability
(c) Move freely (d) Increase energy
3. Which of the following Biomolecules simply refers to as "Staff of life"?
(a) Lipids
(b) Proteins
(c) Vitamins
(d) Carbohydrates
4. Which of the following is the most abundant biomolecule on the earth?
(a) Lipids
(b) Proteins
(c) Carbohydrates
(d) Nucleic acids
5. Which of the following proteins was first sequenced by Frederick Sanger?
(a) Myosin
(b) Insulin
(c) Myoglobin
(d) Haemoglobin
6. Rancidity of lipids of lipid-rich foodstuff is because of
(a) Reduction of fatty acids
(b) Hydrogenation of unsaturated fatty acids
(c) Dehydrogenation of saturated fatty acids
(d) Oxidation of fatty acids

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7. Enzymes are polymers of
- (a) Hexose sugar
 - (b) Amino acids
 - (c) Fatty acids
 - (d) Inorganic phosphate
8. This enzyme was first isolated and purified in the form of crystals
- (a) Urease
 - (b) Pepsin
 - (c) Amylase
 - (d) Ribonuclease
9. Which of the following scientists created the first Bioinformatics database?
- (a) Dayhoff
 - (b) Pearson
 - (c) Richard Durbin
 - (d) Michael. J. Dunn
10. Identify the nucleic acid database
- (a) PDB
 - (b) Swissport
 - (c) PIR
 - (d) DDBJ

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PART B — (5 × 5 = 25 marks)

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

Each answer should not exceed 250 words.

11. (a) Give an account of ionic bond.

Or

- (b) Explain the principle of pH meter.

12. (a) Classify the carbohydrates.

Or

- (b) Explain the isomerism.

13. (a) How will you classify the proteins based on their shape?

Or

- (b) Examine the structure and functions of triglycerides.

14. (a) Compare isoenzymes and coenzymes.

Or

- (b) Examine the role of enzymes in food industry.

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15. (a) Give an account of internet.

Or

- (b) What do you mean by virtual library? How it is useful in molecular biology?

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 essay on the types and principle of Centrifuge.

Or

- (b) Discuss, in detail, the types of chromatography.

17. (a) Highlight the structure and properties of cellulose.

Or

- (b) Bring out the structure and properties of sucrose.

18. (a) Critically examine the structural organization of proteins.

Or

- (b) Examine the physical properties of lipids.

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19. (a) Classify the enzymes.

Or

- (b) Decipher the mechanism of enzyme action using Lock and Key model.

20. (a) Write an essay on protein sequence databases.

Or

- (b) Draw the organization of a computer.
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