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Reg. No. : .....

**Code No. : 5895**

**Sub. Code : PBOM 32**

M.Sc. (CBCS) DEGREE EXAMINATION,  
NOVEMBER 2020.

Third Semester

Botany – Core

**BIOCHEMISTRY AND BIOPHYSICS**

(For those who joined in July 2017 onwards)

Time : Three hours

Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

1. The most important epimer of glucose is
  - (a) Galactose
  - (b) Fructose
  - (c) Arabinose
  - (d) Xylose
2. The sugar found in milk is
  - (a) Galactose
  - (b) Glucose
  - (c) Fructose
  - (d) Lactose

3. An aromatic amino acid is
- (a) Lysine                      (b) Tyrosine  
(c) Taurine                    (d) Arginine
4. The protein present in hair is
- (a) Keratin  
(b) Elastin  
(c) Myosin  
(d) Tropocollagen
5. The number of double bonds in arachidonic acid is
- (a) 1                              (b) 2  
(c) 4                              (d) 6
6. The following contains the least cholesterol:
- (a) Milk                          (b) Meat  
(c) Butter                        (d) Cheese
7. An example of hydrogen transferring coenzyme is
- (a) CoA                          (b) NAD<sup>+</sup>  
(c) Biotin                        (d) TPP

8. An enzyme involved in gluconeogenesis is
- (a) Pyruvate kinase
  - (b) Pyruvate carboxylase
  - (c) Hexokinase
  - (d) Phosphohexose isomerase
9. The unfolding of regular secondary structure causes
- (a) little increase in the entropy of protein
  - (b) large decrease in the entropy of the protein
  - (c) no change in the entropy of the protein
  - (d) large increase in the entropy of the protein
10. If the absorption of Electromagnetic radiation of matter results in the emission of radiation of same or longer wave lengths for a long time, the phenomenon is termed as which of the following?
- (a) Luminescence
  - (b) Fluorescence
  - (c) Phosphorescence
  - (d) Spontaneous emission

PART B — ( $5 \times 5 = 25$  marks)

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

Each answer should not exceed 250 words.

11. (a) Write short notes on Sucrose.

Or

- (b) Write short notes on Chitin.

12. (a) Write short notes on zwitterions.

Or

- (b) Describe peptide bond formation.

13. (a) Write short notes on oil and fat.

Or

- (b) Write short notes on Cholesterol.

14. (a) Explain the concept of active site in enzyme.

Or

- (b) Write short notes on Isoenzymes.

15. (a) Write short notes on Phosphorescence and its significance.

Or

- (b) Explain the phenomenon of Fluorescence and its applications.

PART C — ( $5 \times 8 = 40$  marks)

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

Each answer should not exceed 600 words.

16. (a) Analyze the structure and properties of Disaccharides.

Or

- (b) Write an essay on Isomerism and mutarotation in carbohydrates.

17. (a) Write an essay on Primary and Secondary structure of protein.

Or

- (b) Write a critical note on Ramachandran plot.

18. (a) What are essential fatty acids? Add a note on structure and Role of omega-3 fatty acids.

Or

- (b) Write short notes on (i) Phospholipids  
(ii) Glycolipids.
19. (a) Write short notes on (i) multi enzyme complex. (ii) Theories explaining the mechanism enzyme action

Or

- (b) Write an essay on Allosteric enzymes.
20. (a) Write an essay on Bioluminescence.

Or

- (b) Write short notes on (i) ATP (ii) Enthalpy.
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