Reg. No. :

Code No. : 6367 Sub. Code : PBOM 32

M.Sc. (CBCS) DEGREE EXAMINATION, NOVEMBER 2021

Third Semester

BOTANY - CORE

BIOCHEMISTRY AND BIOPHYSICS

(For those who joined in July 2017 onwards)

Time : Three hours

Maximum : 75 marks

PART A — $(10 \times 1 = 10 \text{ marks})$

Answer ALL the questions.

Choose the correct answers :

- 1. The aldose sugar is
 - (a) Glucose
 - (b) Ribulose
 - (c) Erythrulose
 - (d) Dihydoxyacetone

(6 Pages)

- 2. A pentose sugar is
 - (a) Dihydroxyacetone (b) Ribulose
 - (c) Erythrose (d) Glucose
- 3. Amino acids are ampholytes because they can function as either an
 - (a) acid or a base
 - (b) neutral molecule or an ion
 - (c) polar or a nonpolar molecule
 - (d) standard or a nonstandard monomer in proteins
- 4. Amino acid selenocystenic is coded by
 - (a) UAA (b) UAG
 - (c) UGA (d) AUG
- 5. Which of the following is a glucogenic amino acid?
 - (a) Glycine (b) Alanine
 - (c) Proline (d) All the above

6. A lipid bilayer is permeable to

- (a) Urea (b) Fructose
- (c) Glucose (d) Potassium
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7. The digestive enzymes of cellular compounds are confined to

	(a) Lysosomes	(b)	Ribosomes
	(c) Peroxisomes	(d)	Polysomes
8.	The enzymes are		
	(a) Carbohydrate	(b)	RNA
	(c) Proteins	(d)	Fats

- 9. What is the most common bioluminescent color in marine life?
 - (a) Red (b) Green
 - (c) Blue (d) Orange
- 10. What is the most common source of bioluminescence is surface waters?
 - (a) Squid
 - (b) Jellyfish
 - (c) Crustcians
 - (d) Dinoflagellates

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PART B — $(5 \times 5 = 25 \text{ marks})$

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

11. (a) Write short notes on carbohydrates.

Or

(b) Briefly explain the functions of trioses.

12. (a) Write short notes on amino acid metabolism.

\mathbf{Or}

- (b) Explain the isoelectric pH.
- 13. (a) Describe the saturated fatty acids.

\mathbf{Or}

(b) Point out the unsaturated fatty acids.

14. (a) Describe the cofactors.

\mathbf{Or}

- (b) Explain the activation energy.
- 15. (a) Write short notes on electromagnetic radiation.

Or

(b) Briefly explain the phosphorescence.

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		[P.T.O]

PART C — $(5 \times 8 = 40 \text{ marks})$

- Answer ALL questions, choosing either (a) or (b) Each answer should not exceed 600 words.
- 16. (a) Write (i) short notes on mutarotation (ii) short notes on disaccharides.

\mathbf{Or}

- (b) Explain the properties of polysaccharides.
- 17. (a) Describe the essential and non-essential amino acids.

Or

- (b) Give an account on zwitterions and a add note on its significance.
- 18. (a) Describe β -oxidation.

Or

- (b) Write an essay on gluconeogenesis.
- 19. (a) Describe the allosteric enzyme regulations.

Or

- (b) Explain the nomenclature and classification of enzyme kinetics.
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20. (a) Give a detailed account on activation energy and mechanism of enzyme action.

 \mathbf{Or}

(b) Explain the Laws of thermodynamics.

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