

**Avinashlingam Institute for Home Science and Higher education for Women  
(Deemed to be University), Coimbatore-641043  
Bachelor's Degree examination-November 2018**

**I Semester**

**Class: I UG  
Major: Biochemistry and Biotechnology**

**Time: 3 Hours  
Maximum Marks: 100**

**18BBCC01-Chemistry of Biomolecules**

**Part A**

**10 x 1 = 10**

**Choose the correct answer**

1. Two glucose molecules bonded by  $\beta$ -1,4-glycosidic linkage is
  - a. Lactose
  - b. Maltose
  - c. Cellobiose
  - d. Sucrose
  
2. Which of the following is known as animal starch
  - a. Cellulose
  - b. Glycogen
  - c. Amylopectin
  - d. Chitin
  
3. The major functions of lipids are
  - a. Cell membrane component
  - b. Energy storage
  - c. Signaling
  - d. All of the above
  
4. The bend in the fatty acid chain is caused by
  - a. Carbon atom
  - b. H atom
  - c. O atom
  - d. cis double bond
  
5. Peptidoglycan is also known as
  - a. NAM
  - b. Murein
  - c. NAG
  - d. MurNAC
  
6. Production of ----- is the rate-limiting and irreversible step in cholesterol synthesis
  - a. mevalonate
  - b. isopentenyl pyrophosphate
  - c. farnesyl pyrophosphate
  - d. squalene
  
7. Two single stranded DNA chains are bound each other by
  - a. Phosphodiester bonds
  - b. Glycosidic bonds
  - c. Hydrogen Bonds
  - d. Peptide bonds
  
8. Which of the following RNA contain the information of a protein
  - a. rRNA
  - b. mRNA
  - c. tRNA
  - d. siRNA
  
9. Best example for essential amino acids are
  - a. Glutamine
  - b. Cysteine
  - c. Proline
  - d. Valine
  
10. During the polymerization of amino acids the condensation reaction yields
  - a. a peptide bond
  - b. a water molecule
  - c. a CO<sub>2</sub>
  - d. both a and b

**Part B**

**Answer the following**

**5 x 6 = 30**

**Answer should not exceed 400 words or two pages**

11. a. Sketch a short account on carbohydrates classification.

Or

11. b. Describe the structure and functions of sucrose.

12. a. Elucidate the characterization of simple lipids.

Or

12. b. Discuss the structure of Phospholipids.

13. a. Write a brief note on glycosaminoglycans.

Or

13. b. What are terpenes? Enlist its functions.

14. a. Sketch a detailed structure of DNA and explain.

Or

14. b. Discuss the denaturation and renaturation of DNA helix.

15. a. How will you classify the standard amino acids?

Or

15. b. Describe the electrochemical properties of amino acids.

**Part C**

**Answer the following**

**5 x 12=60**

**Answer should not exceed 800 words or four pages**

16. a. Discuss the structure of monosaccharides

Or

16. b. Explain the biological importance of storage polysaccharides.

17. a. Enumerate the structure and chemistry of phospholipids.

Or

17. b. Discuss the crucial roles of lipids in biological systems.

18. a. Peptidoglycans and teichoic acids are essential components of bacterial cell wall – justify.

Or

18. b. Elaborate the structure and functions of biologically important steroids.

19. a. Compare the different forms of DNA

Or

19. b. Discuss the major forms of ribonucleic acids in detail.

20. a. Elaborate the reactions of amino acids due to their various side chains.

Or

20. b. Discuss the amino acids polymerization and basic protein structures.

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