

**MAHARASHTRA ANIMAL AND FISHERY SCIENCES UNIVERSITY, NAGPUR**  
**SEMESTER END THEORY EXAMINATION, B. TECH. (D. T.)**

Semester	: I (V Dean)	Academic Year	: 2023-2024
Course No.	: DC-101	Course Title	: Biochemistry
Credits	: (1+1=2)	Total Marks	: 50
Day & Date	: Saturday, 09/03/2024	Time	: 2.00 Hrs.

- Note :** 1) All questions from **Section 'A'** are compulsory.  
2) Solve **Any Three** questions from **Section 'B'**.  
3) Draw neat and well labelled diagram wherever necessary.

**SECTION –‘A’**

Q.1 A) Choose the most appropriate answer from the options given below. (05)

- i) Most of the enzymes are .....
  - a) Carbohydrates
  - b) Proteins
  - c) Lipids
  - d) Nucleotides
- ii) The sugar present in RNA is .....
  - a) Deoxyribose
  - b) Glucose
  - c) Ribose
  - d) Xylose
- iii) The number of carbon atoms present in palmitic acid is .....
  - a) 14
  - b) 18
  - c) 12
  - d) 16
- iv) Maltose consists of .....
  - a) Glucose + glucose
  - b) Glucose + fructose
  - c) Glucose + galactose
  - d) Fructose + fructose
- v) Alternate name for Kreb's cycle is .....
  - a) Glycolysis
  - b) Leloir pathway
  - c) Citric acid cycle
  - d) Tagatose pathway

B) Define the following. (05)

- i) Apoenzyme
- ii) Active site
- iii) Dextrins
- iv) Purine
- v) Gluconeogenesis

Q.2 A) Give two examples for the following. (05)

- i) Pyrimidine
- ii) Cofactor
- iii) Aromatic amino acids
- iv) Unsaturated fatty acids
- v) Proenzyme

**(P.T.O.)**

- B) State whether True or False, If False, rewrite the statement after making necessary corrections to the underlined word. (05)
- i) Tyrosine and lysine are unique amino acid.
  - ii) *Cis* configuration means position of H atom on opposite side.
  - iii) In DNA, adenine is always paired with cytosine.
  - iv)  $\alpha$ -Helix is the primary structure of protein.
  - v) Cellulose cannot be digested by human beings.

### SECTION – 'B'

- Q.3 A) Explain the term nucleotide. Discuss the double helical structure of DNA. (05)  
B) Define enzyme. Explain the effect of substrate concentration and pH on enzyme activity. (05)
- Q.4 A) Write the biochemical reactions involved in glycolysis. (05)  
B) Discuss in details  $\beta$  oxidation of long chain fatty acids. (05)
- Q.5 A) Define lipid. Give the structure of triglyceride. (03)  
B) What are immobilized enzymes? (03)  
C) Describe the pentose phosphate pathway in detail. (04)
- Q.6 A) Discuss in details types of inhibitors. (03)  
B) Differentiate between m-RNA and t-RNA. (03)  
C) Define carbohydrate. Describe the classification of carbohydrate in details. (04)
- Q.7 Define the term protein. Explain in detail classification of protein with suitable examples. Write transamination reaction of amino acid metabolism. (10)

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