

MAHARASHTRA ANIMAL AND FISHERY SCIENCES UNIVERSITY, NAGPUR
SEMESTER END THEORY EXAMINATION, B. Tech. Dairy Technology 2019-20

Semester	: I (V Dean)	Academic Year	: 2019-2020
Course No.	: DC-101	Course Title	: Biochemistry
Credits	: 1+1=2	Total Marks	: 50
Day & Date	: Thursday, 09.01.2020	Time	: 11.00 to 13.00 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) Nucleotides contain as a characteristic component.
 - a) Nitrogenous base
 - b) Pentose sugar
 - c) Phosphate group
 - d) All of these
- ii) In alkaline solution, p-nitrophenol absorbs the light at nm wavelength.
 - a) 345
 - b) 375
 - c) 405
 - d) 425
- iii) The yield of completely burned fatty acids is approximately calories per gram.
 - a) 2000
 - b) 4000
 - c) 7000
 - d) 9000
- iv) Glycolysis is an almost universal central pathway of catabolism.
 - a) Glucose
 - b) Fructose
 - c) Mannose
 - d) Galactose
- v) The sulphur containing amino acid is.....
 - a) Cystine
 - b) Methionine
 - c) Both a) and b)
 - d) None of these

B) Define the following. (05)

- i) Enzyme immobilization
- ii) Katal
- iii) Amino acid
- iv) Zwitterions
- v) Zymogens

Q. 2. A) Give reasons for the following. (05)

- i) Sucrose is called as invert sugar.
- ii) Glycine is an unique amino acid.
- iii) Why DNA chain has the polarity at 5' end and 3' end?
- iv) Large deviations in pH lead to denaturation of enzyme/protein.
- v) Why some amino acids absorb the light?

(P.T.O.)

- B) State whether True or False. If false, rewrite the statement after making necessary corrections to underlined word. (05)
- i) All enzymes are proteins.
 - ii) The citric acid cycle is also known as the glycolysis cycle.
 - iii) Glycogen is a large polymer of glucose residues linked by α 1-4 glucosidic bonds with branches at every 10 residues.
 - iv) An amino acid is a molecule, containing both amino and carboxyl functional groups.
 - v) Glycolysis is especially important in periods of starvation or rigorous exercise.

SECTION -'B'

- Q. 3 A) Describe the Watson and Crick model of DNA structure with neat labelled diagram. (05)
- B) What do you understand by the term protein? Briefly explain the protein structures. (05)
- Q. 4 A) Explain various factors affecting enzyme action. (05)
- B) Discuss in details about glycolysis. (05)
- Q. 5 A) Explain in brief the urea cycle. (03)
- B) Describe the significance of TCA cycle. (03)
- C) Discuss in brief the β -oxidation of fatty acid. (04)
- Q. 6 A) Differentiate between coenzyme and cofactors. (03)
- B) Differentiate between m-RNA and t-RNA. (03)
- C) Define enzyme and write down its classification. (04)
- Q. 7 Define lipids. Explain in details classification of lipids with suitable examples. (10)
