

MAHARASHTRA ANIMAL AND FISHERY SCIENCES UNIVERSITY, NAGPUR
SEMESTER END THEORY EXAMINATION, B.Tech. (D.T.) Degree Course 2017-18

Academic Year : 2017-2018

Course Title : Chemistry of Milk

Total Marks : 50

Time : 11.00 to 13.00 Hrs.

2) Solve **Any Three** questions from **Section 'B'**.

3) Draw neat and well labelled diagram wherever necessary.

SECTION - 'A'

(05)

- a) Vitamin A b) Vitamin E
c) Vitamin D d) Vitamin K

- a) 1 b) 4
c) 7 d) 2

- a) 6 b) 8
c) 10 d) 12

- [illegible]

- a) Albumin b) Globulin
c) Keratin d) β -casein

(05)

- Ash
- Lactoferrin
- Lecithin
- Lactobionic acid
- Koestler number

(05)

- i) Most susceptible milk protein to plasmin action.
- ii) Equilibrium ratio of β to α lactose at 20°C.
- iii) Biological catalyst and mostly proteinaceous in nature.
- iv) Most abundant saturated fatty acid of milk fat.
- v) Most heat sensitive protein among whey protein.

(P.T.O.)

- B) State whether True or False, If false, rewrite the statement after making necessary corrections. (05)
- i) The most variable component of milk is protein.
 - ii) Whey proteins do not contain phosphorus.
 - iii) The lactose content of colostrums is more than that of normal milk.
 - iv) Biuret method is used for the estimation of magnesium content in milk.
 - v) Cholesterol is the main unsaponifiable component of milk fat.

SECTION – 'B'

- Q. 3 a) Define milk according to FSSAI and Dairy Chemist. Discuss the effect of species of animal, breed of animal and feed on the composition of milk. (05)
- b) Define various constants of milk fat and give their approximate values. (05)
- Q. 4 a) Distinguish between casein and whey proteins. (05)
- b) Enlist the methods of estimation of protein. Explain in details fractionation scheme of proteins. (05)
- Q. 5 a) Discuss the structure and distribution of constituents in milk. (03)
- b) What is salt balance in milk? Discuss. (03)
- c) Discuss the significance of trace elements in milk. Add a note of toxic trace elements. (04)
- Q. 6 a) Write a note on milk contact surfaces. (03)
- b) Give the biological significance of vitamin A and D along with structure. (03)
- c) Define enzymes. Discuss the significance of catalase and lactoperoxidase in the field of dairying. (04)
- Q. 7 Explain important physical properties of lactose. Discuss the Maillard reaction in details along with its significance in dairy industry. (10)
