

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

Semester : VI (New Syllabus)	Academic Year : 2017-2018
Course No. : DM-604	Course Title : Dairy Biotechnology
Credits : 2+1=3	Total Marks : 50
Day & Date : Monday, 18.06.18	Time : 11.00 to 13.00 Hrs.

- Note :**
- 1) All questions from **Section 'A'** are compulsory.
 - 2) Solve **Any Five** 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) A compound that induces the production of antibiotics
 - a) Antibiosis
 - b) Antisense DNA
 - c) Antigen
 - d) None of these
 - ii) Most extensively used method cell immobilization is
 - a) Entrapment
 - b) Physical binding
 - c) Covalent bonding
 - d) Co-polymerization
 - iii) PCR requires the equipment
 - a) Centrifuge
 - b) Autoclave
 - c) Thermocycler
 - d) Hot air oven
 - iv) In 'B' type of DNA, the number of base pairs present in a helix
 - a) 8 numbers
 - b) 9 numbers
 - c) 7 numbers
 - d) 10 numbers
 - v) Nisin, produced by *L. lactis* ssp. *lactis* is controlled by gene
 - a) Chromosomal DNA
 - b) Plasmid DNA
 - c) Transposons on chromosomal DNA
 - d) Transposons on plasmid DNA
- B) Give Definition. (05)
- i) Protoplast
 - ii) Vector
 - iii) Plasmid
 - iv) DNA replication
 - v) Biological Oxygen Demand (BOD).
- Q. 2 A) Answer the following. (05)
- i) What is Mutation?
 - ii) What is Conjugation?
 - iii) Function of m-RNA.
 - iv) What is Wobble hypothesis?
 - v) Use of biosensor in Dairy Industry.

(P.T.O.)

- B) State "True or False", If False, rewrite the statement after making necessary corrections. (05)
- i) The bacteriophage of Lactic acid bacteria contain nucleic acid is RNA.
 - ii) Colony hybridization method detects the recombinants after transformation in bacteria.
 - iii) *Saccharomyces carlsbergensis* is the starter used in beer manufacture.
 - iv) Early blowing of cheese is mainly due to the micrococci organisms.
 - v) Rennilase is a microbial rennet.

SECTION – 'B'

- Q. 3 Define Biotechnology and Discuss in detail historical developments of Dairy Biotechnology. (06)
- Q. 4 Write down the double helix structure of DNA and mention the types? (06)
- Q. 5 Discuss in detail application of biotechnology in food industry. (06)
- Q. 6
- a) Differentiate between lagging strand and leading strand? (02)
 - b) Define Genetic code. (02)
 - c) Differentiate between DNA and RNA. (02)
- Q. 7
- a) Comment on Tissue culture in dairy culture. (03)
 - b) Discuss in detail protoplast fusion. (03)
- Q. 8 Write short notes on.
- a) Application of biotechnology in Effluent Treatment Plant. (02)
 - b) Types of Point mutations. (02)
 - c) Comment on Dairy enzymes. (02)
- Q. 9
- a) Write the advantages of Genetically Modified foods? (02)
 - b) Describe various applications of biotechnology in genetic manipulation of dairy starter. (04)
