

MAHARASHTRA ANIMAL AND FISHERY SCIENCES UNIVERSITY, NAGPUR
SEMESTER END THEORY EXAMINATION, B.Tech. Dairy Technology 2018-19

Semester	: VI (New Syllabus)	Academic Year	: 2018-2019
Course No.	: DM-604	Course Title	: Dairy Biotechnology
Credits	: 2+1=3	Total Marks	: 50
Day & Date	: Monday, 24.06.2019	Time	: 11.00 to 13.00 Hrs.

- Note :** 1) Section "A" is 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) The enzyme that is also called as biological scissor
 - a) Peptidase
 - b) DNA polymerase
 - c) Ligase
 - d) Restriction endonuclease
- ii) Possible number of codons that can be formed from 4 nucleotides
 - a) 61
 - b) 62
 - c) 63
 - d) 64
- iii) The bacteriophage acting as cloning vector
 - a) Plasmid
 - b) Cosmid
 - c) Lambda
 - d) YAC
- iv) In DNA replication, the adenine combines with
 - a) Thymine
 - b) Uracil
 - c) Guanine
 - d) Cytosine
- v) The sugar in DNA does not contain oxygen at carbon atom.
 - a) 1
 - b) 2
 - c) 3
 - d) 4

B) Answer in one line / one word. (05)

- i) The three adjacent nucleotides on a DNA strand are called.
- ii) Complimentary Base Pairing.
- iii) The process of synthesizing RNA from DNA is called.
- iv) Sudden change in genetic makeup of DNA is called.
- v) In a nucleotide, the carbon atom of a sugar to which nitrogen base is attached.

Q. 2 A) Define / explain in one line / word. (05)

- i) PCR
- ii) RFLP
- iii) The amino acid coded by initiation codon.
- iv) Replication
- v) Extra chromosomal covalently closed circular DNA is called

(P.T.O.)

- B) State whether True or False. If false, rewrite the statement after making necessary corrections. (05)
- i) Transduction is a process of DNA transfer in bacteria through conjugation bridge formed by sex pili.
 - ii) Transfer of genetic material from one bacteria to other through bacteriophage is called transformation.
 - iii) 5.5 MDal plasmid responsible for production of Diacetyl flavour is present in *Streptococcus thermophilus*.
 - iv) Separation of DNA fragments is done by Gel Electrophoresis method.
 - v) The scientist who has done x-ray crystallography of DNA is Rosalind Franklin.

SECTION – 'B'

- Q. 3 Define dairy biotechnology. Write in detail about the uses of Biotechnology in different fields. (06)
- Q. 4 Explain in detail how the RNA is synthesized from DNA. (06)
- Q. 5 Explain in detail how the Protein is synthesized in the cell. (06)
- Q. 6.
- a) Explain about Recombinant DNA technology. (02)
 - b) Write about application of biotechnology in food industry. (02)
 - c) Write about Genetic manipulation of dairy starters. (02)
- Q. 7
- a) Write the structure of DNA. (03)
 - b) Short note on tissue culture. (03)
- Q. 8
- a) Write a short note on dairy enzymes. (02)
 - b) Write a short note on GMO food. (02)
 - c) Types of RNA. (02)
- Q. 9
- a) Write a note on application of biotechnology in dairy industry. (02)
 - b) Discuss in detail application of biotechnology in processing of dairy effluent treatment. (04)
