

[Time: Two and Half Hours]

[Marks:75]

Please check whether you have got the right question paper.

- N.B:
1. All Questions carry equal marks.
 2. All Questions are compulsory
 3. Draw neat and labeled diagrams whenever necessary.

- Q.1 A. Name the following **(Any Three)**
- i) Heterofermentative lactic starter
 - ii) Enzyme used to determine efficiency of Pasteurization
 - iii) Hard cheese
 - iv) Starter culture for yoghurt.
 - v) Colouring agent used in butter.
 - vi) Oxidation reduction dye
- 12
- B. Answer the following **(Any two)**
- i) Explain the methods used for enumeration of bacteria in milk.
 - ii) Describe the methods of selective destruction of organisms in milk by application of mild heat.
 - iii) Schematically explain the manufacture of butter.
 - iv) Explain steps involved in the production of Swiss cheese.
- 03
- Q.2 A. Define the following **(Any Three)**
- i) Biogas
 - ii) Phytoremediation
 - iii) Total dissolved solids
 - iv) Biochemical oxygen demand
 - v) Acidogenesis
 - vi) Biostimulation
- 12
- B. Discuss **(Any Two)** of the following.
- i) Dairy industry waste with respect to nature, characteristics and treatment strategies.
 - ii) Biological production of hydrogen gas.
 - iii) The three stages involved in biogas production.
 - iv) Microbial bioremediation with suitable examples.
- 03
- Q.3 A. Do as directed **(Any Three)** of the following.
- i) Give an example of fillers used in dust of preparations of Bt insecticide
 - ii) Name of virus used as a biocontrol agent
 - iii) State an application of a biosensor.
 - iv) Name a spreader used in liquid formulation of a biopesticide
 - v) Give an example of a leguminous plant
 - vi) State an advantage of biofertilisers
- 12
- B. Attempt the following **(Any Two)**
- i) Elaborate on the advantages, limitations, safety and future aspects of bioinsecticide use.
 - ii) Discuss soil inoculants.
 - iii) Enlist the different candidates used as biocontrol agents and explain any one in detail.
 - iv) With a suitable diagram, explain the working of any one biosensor. State its applications.

P.T.O

Q.4 Give the significance / role of (Any three)

- i) Process design
- ii) Quality assurance
- iii) GMP
- iv) Copyrights
- v) Breeder's exemption
- vi) Plant variety protection

B. Answer the following (Any Two)

- i) What is the role of an entrepreneur?
- ii) How is patenting of GMO's done? Explain with example.
- iii) What are the of different environmental grades and their specifications for the manufacture of pharmaceutical products?
- iv) What are the benefits and problems of IPR?

Q.5 Write short notes on (Any Three)

- i) Factors affecting bacteriological quality of milk
- ii) Petrocrops
- iii) Renewable energy sources
- iv) Biofuels
- v) Quality control
- vi) Choice of IPR protection

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