

**M. SC. FOOD SAFETY AND
QUALITY MANAGEMENT
(MSCFSQM)**

Term-End Examination

June, 2026

MVP-006 : FOOD BIOTECHNOLOGY

Time : 3 Hours

Maximum Marks : 100

Note : (i) Attempt any *five* questions.

(ii) All questions carry equal marks.

1. Write note on the following (any *four*) :

5×4=20

- (i) Mutagenesis
- (ii) Industrial fermentation
- (iii) Single cell protein
- (iv) Restriction enzymes
- (v) Ethical issues in GM food production.

2. (i) Discuss in detail the production of alcoholic beverages. 10
(ii) Enumerate the vectors used in recombinant DNA technology. Give the properties of a good vector. 10
3. (i) Discuss in detail the significance of probiotics and their applications. 10
(ii) Describe biotechnological methods for production of amino acids. 10
4. (i) Give the flow diagram of biogum production. Describe functional properties of biogums. 10
(ii) Enlist biocolors and discuss in detail the current advanced techniques for color extraction. 10
5. (i) Give the structure of enzymes. Explain in detail the nomenclature and classification of enzymes. 10
(ii) Describe the methods used for making transgenic animals. 10

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6. Give *two* examples of Genetically Engineered crops with unique features. Mention the steps involved in the creation of GM crops. 10+10
7. (a) Discuss the approval protocol to be followed for GM food in India. 10
- (b) Explain the biotechnological intervention in biofuel and bioplastic production from food wastes. 10

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