

(AUTONOMOUS)

MSc DEGREE EXAMINATION MAY 2026

(Second Semester)

Branch – **FOODS AND NUTRITION**

MAJOR ELECTIVE COURSE – I FOOD BIOTECHNOLOGY

Time: Three Hours

Maximum: 75 Marks

SECTION-A (10 Marks)

Answer **ALL** questions

ALL questions carry **EQUAL** marks

(10 × 1 = 10)

Module No.	Question No.	Question	K Level	CO
1	1	The enzyme that synthesizes DNA from an RNA template is (i) DNA polymerase I (ii) RNA polymerase (iii) Reverse transcriptase (iv) Ligase	K1	CO1
	2	Which of the following is NOT a feature of recombinant DNA technology? (i) Restriction digestion (ii) DNA ligation (iii) PCR amplification (iv) Glycolysis	K2	CO1
2	3	PCR-based GMO detection targets: (i) Proteins (ii) DNA sequences (iii) Lipids (iv) Enzymes	K1	CO2
	4	Ayurgenomics combines Ayurveda with: (i) Genomics (ii) Proteomics (iii) Microbiology (iv) Pharmacology	K2	CO2
3	5	Vinegar production involves oxidation of ethanol by: (i) Lactobacillus (ii) Streptococcus (iii) Acetobacter (iv) Bacillus	K1	CO3
	6	Metagenomics primarily studies: (i) Single isolated microbes (ii) Microbial enzymes only (iii) Genetic material from environmental samples (iv) Plant genomes	K2	CO3
4	7	Xylitol is classified as a: (i) Artificial pigment (ii) Low-calorie sweetener (iii) high calorie sweetner (iv) amino acid	K1	CO4
	8	Microbial production of glutamic acid is widely used for (i) Flavor enhancement (ii) Pigment production (iii) Vitamin synthesis (iv) Enzyme inhibition	K2	CO4
5	9	Micropropagation is mainly used for (i) Rapid clonal propagation (ii) Genetic mutation (iii) Hybrid seed production (iv) Fermentation	K1	CO5
	10	AI in food safety is mainly used for (i) Manual inspection (ii) Traditional cooking (iii) Predictive hazard analysis (iv) Fermentation only	K2	CO5

Cont...

SECTION - B (35 Marks)Answer **ALL** questions**ALL** questions carry **EQUAL** Marks

(5 × 7 = 35)

Module No.	Question No.	Question	K Level	CO
1	11.a.	Explain the Structure and Function of DNA.	K2	CO1
		(OR)		
	11.b.	Show Recombinant DNA Technology.		
2	12.a.	Sketch the techniques of precision breeding.	K3	CO2
		(OR)		
	12.b.	Illustrate the modern GMO detection methods.		
3	13.a.	Examine the production of vinegar.	K4	CO3
		(OR)		
	13.b.	Outline the role of yeast in the production of alcoholic beverages.		
4	14.a.	Summarize the industrial production of enzymes.	K5	CO4
		(OR)		
	14.b.	Predict the applications of bacteriocins.		
5	15.a.	Explain the role of engineering in organic farming.	K3	CO5
		(OR)		
	15.b.	Sketch the applications of plant tissue culture.		

SECTION -C (30 Marks)Answer **ANY THREE** questions**ALL** questions carry **EQUAL** Marks

(3 × 10 = 30)

Module No.	Question No.	Question	K Level	CO
1	16	Show the properties and features of protein expression vectors.	K2	CO1
2	17	Interpret the ethical issues of food biotechnology.	K3	CO2
3	18	Deduce the role of metagenomics in food fermentation.	K4	CO3
4	19	Evaluate the role of AI in food enzyme development and precision nutrition.	K5	CO4
5	20	Explain the role of AI in Food Safety and Pathogen Microbiology.	K3	CO5

Z-Z-Z

END