

BIRLA INSTITUTE OF TECHNOLOGY, MESRA, RANCHI
(END SEMESTER EXAMINATION)

CLASS: IMSC
BRANCH: FOOD TECH

SEMESTER : IXth
SESSION : MO/2023

SUBJECT: FT512 FOOD BIOTECHNOLOGY

TIME: 3 Hours

FULL MARKS: 50

INSTRUCTIONS:

1. The question paper contains 5 questions each of 10 marks and total 50 marks.
 2. Attempt all questions.
 3. The missing data, if any, may be assumed suitably.
 4. Before attempting the question paper, be sure that you have got the correct question paper.
 5. Tables/Data hand book/Graph paper etc. to be supplied to the candidates in the examination hall.
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Q.1(a)	The integration of genetically modified organisms (GMOs) in the food supply chain raises various ethical considerations. Critically analyze the potential ethical considerations associated with genetically modified organisms in food safety.	[5] 1	5
Q.1(b)	Diagrammatically explain the process flow of genetic engineering for crop improvement.	[5] 1	3
Q.2(a)	Summarize the significance of nisin and pediocins in food preservation and provide examples of foods where they might be applied.	[5] 2	2
Q.2(b)	Discuss the key characteristics of the application of bacteriocins in food preservation.	[5] 2	3
Q.3(a)	Describe fat substitutes? How they are important in the food industry.	[5] 2	1
Q.3(b)	Propose a hypothetical scenario where protein engineering could be applied to improve an existing industrial process.	[5] 4	4
Q.4(a)	Outline the important benefits of safeguarding Intellectual Property Rights in food biotechnology.	[5] 5	3
Q.4(b)	Explain Biofortification of crops. Provide ten examples of crop plant that has been fortified for enhanced level of nutrients.	[5] 3	2
Q.5(a)	Classify feedstock used in Bioethanol Production. Evaluate the bioethanol production process from different feed stock.	[5] 5	3
Q.5(b)	Provide a planned pathway for biodiesel production. Discuss the by-products generated in this process and their possible uses.	[5] 5	3

:::24/11/2023 E:::