

BIRLA INSTITUTE OF TECHNOLOGY, MESRA, RANCHI
(MID SEMESTER EXAMINATION SP/2024)

CLASS: B.TECH
BRANCH: BIOTECH

SEMESTER : VI
SESSION : SP/2024

SUBJECT: BE315 FOOD SCIENCE AND TECHNOLOGY

TIME: 02 Hours

FULL MARKS: 25

INSTRUCTIONS:

1. The question paper contains 5 questions each of 5 marks and total 25 marks.
 2. Attempt all questions.
 3. The missing data, if any, may be assumed suitably.
 4. Tables/Data handbook/Graph paper etc., if applicable, will be supplied to the candidates
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| Q.1(a) | Explain the term antinutrients. | [2] | 1 2 |
| Q.1(b) | Discuss two main types of malnutrition. Provide examples of nutritional deficiencies associated with each type and source. | [3] | 1 1 |

- Q.2(a) Calculate RDA for the nutrient X in a population through provided graph. [2] 1 4

Number of people (in Crores)	Daily requirement of Nutrient X in mg/day
4	20-30
8	31-40
12	41-50
8	51-60
4	61-70

- Q.2(b) Let's consider the Recommended Dietary Allowances (RDAs) for a hypothetical age group: 25-year-old adults, where the RDAs are 90 mg/day for vitamin C and 1000 mg/day for calcium. Plan a one-day menu that meets these RDAs through various food sources. Justify your food choices. [3] 1 5

Items	Vitamin C (mg)	Calcium (mg)
Orange Juice (240 ml)	124	
Strawberries (1 cup)	89	
Kale (1 cup, cooked)	53	100
Broccoli (1 cup, cooked)	81	62
Oranges (1 medium)	70	
Greek Yogurt (1 cup)		200
Almonds (30g)		76

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| Q.3(a) | Differentiate macronutrients and micronutrients. | [2] | 1 4 |
| Q.3(b) | Provide an example of a food item that is rich in macronutrients and explain its significance in a balanced diet. | [3] | 1 2 |

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| Q.4(a) | Describe the role of enzymes in baking industries. List any five enzymes. | [2] | 2 2 |
| Q.4(b) | Propose two ways in which enzymes can be utilized to enhance the nutritional quality of processed foods | [3] | 2 3 |

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| Q.5(a) | Differentiate between probiotic and prebiotic. | [2] | 2 4 |
| Q.5(b) | Describe the process of fermentation in the production of a specific fermented food, such as yogurt or fermented Dosa batter. | [3] | 2 2 |