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0302E1383A

Candidate's Seat No : _____

MSc Sem.-1 Examination

402

Food Sciences and Nutrition

February-2025

Time : 2-30 Hours]

[Max. Marks : 70

Instructions: Illustrate your answers with neat diagrams wherever necessary.

Q. 1 Write the following

- (i) What is food quality? Enlist the methods of food quality assessment and explain any two objective evaluation methods in detail. (7 Marks)
- (ii) Define sensory evaluation of food products. Why the attributes of sensory evaluation changes according to the type of food? (7 Marks)

OR

- (i) What are difference tests? Explain the types in detail. (7 Marks)
- (ii) How do we evaluation colour of the food products using objective evaluation techniques. (7 Marks)

Q. 2 Write the following

- (i) Define the Classification of Food Properties. (7 Marks)
- (ii) Explain the application of Food Hydrocolloids to Nutritional Security Properties - Low Salt, Low Fat, and Low Glycemic Index (7 Marks)

OR

- (i) Define emulsions with an example. What are the Properties of emulsions. Also give the mechanism of action of emulsifier. (7 Marks)
- (ii) Explain Hydrocolloids as thickening and gelling agents in food. Including the Hydrocolloid thickeners and gelling agents used in foods. (7 Marks)

Q. 3 Write the following

- (i) Discuss the role of milk and its components (proteins, fats, carbohydrates, and minerals) in human nutrition. Highlight the significance of lactose and casein in promoting calcium absorption and their roles in various metabolic processes. (7 Marks)
- (ii) Write any three stages of sugar cookery in detail. (7 Marks)

OR

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- (i) Explain the physiological and biochemical changes that occur during the ripening of fruits. Discuss the role of ethylene and the enzymatic processes involved in altering color, texture, and flavor. (7 Marks)
- (ii) Write about milling and germination process in pulses. (7 Marks)

Q. 4 Write the following

- (i) Explain the steps in black tea processing and how each affects its quality and flavor. Compare this to green tea processing. (7 Marks)
- (ii) Describe the specific enzymes used in brewing, winemaking, and baking, detailing their functions and the outcomes they produce. (7 Marks)

OR

- (i) Write about antioxidant properties of tea, factors affecting quality of tea and adulteration of tea in detail. (7 Marks)
- (ii) Explain the role of enzymes in food processing, focusing on their applications in improving texture, flavor, and shelf life. (7 Marks)

Q 5. Attempt any seven out of twelve

(14 Marks)

- (i) What is CIE?
 - (ii) Write a short note on shortometer.
 - (iii) Define sensitivity threshold.
 - (iv) What is Modified Starch? Why is starch Modified?
 - (v) Define Free water & Bound water?
 - (vi) Define Food Gels, Colloidal Dispersion & Suspension.
 - (vii) What is the role of gluten proteins in wheat, and why are they important in baking?
 - (viii) What are the selection criteria for finfish and shellfish to ensure quality and freshness?
 - (ix) What is the significance of ageing in meat processing, and how does it affect the flavor and tenderness of beef?
 - (x) What are the essential steps in the fermentation process of fruit wines?
 - (xi) What are the primary functions of proteases and amylases in food processing?
 - (xii) What is the role of pectinases in fruit juice production?
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