

UPC-2203030016

Course- B.Sc.(H) Food Technology

Paper- Food Additives

Semester- VII

Marks-60

Instructions:

Write your Roll No. on the top immediately on receipt of this question paper.

Attempt any FOUR questions in all.

All questions carry equal marks (15 marks each).

Parts of the same question must be attempted together.

Q.1.

(a) Define food additives and describe their role in improving the safety, shelf-life, and sensory properties of foods. Classify additives based on their functional purpose with examples. (8 Marks)

(b) Discuss the toxicological principles used in the evaluation of food additives. Explain the relationship between LOAEL, NOAEL, and ADI. (7 Marks)

Q.2.

(a) Explain the classification of preservatives according to their chemical nature. Discuss the mechanism of action of sulphites as antimicrobial agents in food. (8 Marks)

(b) Compare and contrast the technological importance and potential health risks associated with the use of benzoates and sorbates in processed foods. (7 Marks)

Q.3.

(a) Describe the major classes of food colours with examples. Discuss the analytical and regulatory measures taken to ensure colour safety in foods. (8 Marks)

(b) Discuss the recent developments in natural sweeteners such as stevia and monk fruit. Highlight their technological and nutritional advantages over synthetic counterparts. (7 Marks)

Q.4.

(a) Explain the mechanism of emulsifiers in maintaining emulsion stability. Discuss two permitted emulsifiers used in bakery and confectionery products. (8 Marks)

(b) Analyze the role of thickeners and stabilizers in improving the textural and rheological properties of dairy and beverage products. Provide relevant examples. (7 Marks)

Q.5. Write short notes on any THREE of the following: (3 x 5 = 15 Marks)

(a) FSSAI guidelines for the use of food additives.

(b) Determination and importance of LD50 in acute toxicity evaluation.

(c) Functional roles of emulsifiers in low-fat spreads.

(d) Technological aspects of nitrates/nitrites in meat processing.

(e) Recent innovations in colour and sweetener systems for processed foods.