FOOD BIOTECHNOLOGY
(BTC3131)

Time Allotted : 2½ hrs **Full Marks : 60**

Figures out of the right margin indicate full marks.

Candidates are required to answer Group A and any 4 (four) from Group B to E, taking one from each group.

Candidates are required to give answer in their own words as far as practicable.

Group – A

1. Answer any twelve: **12 × 1 = 12**

Choose the correct alternative for the following

(i) Mineral water is mainly sterilized by
(a) Radiation (b) Heat
(c) Pasteurization (d) Filtration

(ii) Radurization is
(a) Low dose pasteurization (b) Low dose radiation pasteurization
(c) Cold sterilization (d) Appertization

(iii) Tempeh is
(a) Fermented wheat gluten (b) Fermented corn
(c) Soyabean fermented with Mold (d) Unripened soybean cheese

(iv) Lipooygenase is used to improve the strength of
(a) Gluten protein (b) Starch
(c) Lipid (d) None of these

(v) Pectinase is mainly used in clarification of
(a) Fruit juice (b) Milk
(c) Beer (d) None of these

(vi) Transesterification mainly occurs in
(a) Baking industry (b) Brewing industry
(c) Oil industry (d) None of these

(vii) Glutathione act as antioxidant due to presence of
(a) Sulphydryl group (b) Carbonyl group
(c) Hydroxyl group (d) none of these

(viii) Commonly used antioxidant is
(a) Vitamin C (b) Vitamin K
(c) Vitamin D (d) None of these

(ix) Putrefaction is the process of degradation of
(a) Protein (b) Carbohydrate
(c) Lipid (d) None of these

(x) Limonene is a
(a) Colouring agent (b) Flavouring agent
(c) Preservative (d) None of these

Fill in the blanks with the correct word

(xi) Gaseous sterilizing agent is _____.

(xii) Flavonoids are food _____agents.

(xiii) Botulin is type of _____.

(xiv) Acrylamide formation is inhibited by _____ enzyme.

(xv) Soy sauce is produced by inoculating soybeans by _____.

Group - B

2. (a) When food is considered as spoiled? *[(CO3)(Analyse/HOCQ)]*
(b) What are aerobic and anaerobic spoilage of meat? *[(CO4)(Remember/LOCQ)]*
(c) Describe the different types of pasteurization mentioning conditions of each type. *[(CO2)(Apply/IOCQ)]*

4 + 4 + 4 = 12

3. (a) How pH of a food affects the nature of spoilage flora? *[(CO3)(Analyse/HOCQ)]*
(b) What is TDT? How it is determined? *[(CO4)(Remember/LOCQ)]*
(c) What are IMF? Give examples. *[(CO2)(Apply/IOCQ)]*

3 + (1 + 4) + 4 = 12

Group - C

4. (a) Describe with a flow chart the main steps for cheese production. *[(CO3)(Analyse/HOCQ)]*
(b) Depending on the production process how many types of cheese are produced industrially? Give one example of each type. *[(CO4)(Remember/LOCQ)]*
(c) discuss the role of proteolytic enzymes in the production of cheese. *[(CO2)(Apply/IOCQ)]*

3 + 6 + 3 = 12

5. (a) Define the following:
(i) Mashing (ii) Malting (iii) Hop (iv) Wort. *[(CO3)(Analyse/HOCQ)]*
(b) What is the importance of malo-lactate fermentation in wine industry? *[(CO2)(Apply/IOCQ)]*

(2 × 4) + 4 = 12

Group - D

6. (a) Distinguish between transesterification and interesterification. *[(CO3)(Analyse/HOCQ)]*
   (b) Justify the role of Maillard reaction in baking industry. *[(CO4)(Remember/LOCQ)]*
   (c) Discuss the chill hazing process. *[(CO2)(Apply/IOCQ)]*
   (d) Define hemicellulose. *[(CO2)(Apply/IOCQ)]*

3 + 3 + 3 + 3 = 12

7. (a) Mention the role of enzymes in dairy industry. *[(CO3)(Analyse/HOCQ)]*
   (b) Briefly discuss how starch is completely hydrolysed. *[(CO4)(Remember/LOCQ)]*
   (c) Explain the importance of glucose oxidase in beer preparation. *[(CO2)(Apply/IOCQ)]*

4+ 4 + 4 = 12

Group - E

8. (a) Explain why myoglobin containing food changes their colour? *[(CO3)(Analyse/HOCQ)]*
   (b) Mention one bacterial and one fungal cytotoxins and their mode of action. *[(CO4)(Remember/LOCQ)]*
   (c) Discuss the role of nitrite as food preservative. *[(CO2)(Apply/IOCQ)]*

4 + 4 + 4 = 12

9. (a) Analyse with suitable example the food borne infection process. *[(CO3)(Analyse/HOCQ)]*
   (b) What are the advantages and disadvantages of chlorophyllase enzyme? *[(CO4)(Remember/LOCQ)]*
   (c) Briefly define delayed bitterness. *[(CO2)(Apply/IOCQ)]*
   (d) Illustrate the term ergotism. *[(CO2)(Apply/IOCQ)]*

5 + 3 + 2 + 2 = 12

Cognition Level	LOCQ	IOCQ	HOCQ
Percentage distribution	30.21	34.37	35.41