FOOD BIOTECHNOLOGY
(BIOT 3131)

Time Allotted : 3 hrs **Full Marks : 70**

Figures out of the right margin indicate full marks.

Candidates are required to answer Group A and any 5 (five) from Group B to E, taking at least one from each group.

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

Group – A
(Multiple Choice Type Questions)

1. Choose the correct alternative for the following: **10 × 1 = 10**

(i) Canning industry maintains sterility by
(a) Sucking out all air inside the can by vacuum pump
(b) With either N_2 or CO_2
(c) Either of (a) or (b)
(d) None of the above.

(ii) Lipase is used to improve the production of
(a) Cheese (b) Fruit juice
(c) Bread (d) Oil.

(iii) Nitrogen containing heterocyclic compounds are
(a) Isoprenoids (b) Alkaloids
(c) Flavonoids (d) None of these.

(iv) Amylopectin is completely hydrolysed by
(a) Amyloglucosidase (b) Amylase
(c) Pullulanase (d) Dextranase.

(v) Sauerkraut is produced by fermenting cabbage with
(a) Propionic acid bacteria (b) Lactic acid bacteria
(c) Acetic acid bacteria (d) None of these.

(vi) Neurotoxins are produced by
(a) A. flavus (b) A. oryzae
(c) A. niger (d) C. botulinum.

(vii) Glutathione is a
(a) Antioxidant (b) Fat replacer
(c) Preservative (d) Artificial sweetener.

(viii) Roquefort cheese is
(a) Red cheese (b) Blue cheese
(c) Hard cheese with large holes (d) Mold ripened cheese.

(ix) UV radiation as a method of sterilization is mostly used in the following industry
(a) Dairy (b) Bakery
(c) Mineral water (d) Poultry.

(x) Parabens are added in food as
(a) Antioxidant (b) Emulsifier
(c) Preservative (d) Fat replacer.

Group – B

2. (a) Distinguish between rancidity and putrefaction. What are the different types of rancidity?

(b) How putrefaction is detected chemically and by ERV method?

(3 + 3) + (3 + 3) = 12

3. (a) Compare the following methods of food preservation:
(i) canning (ii) irradiation, (iii) refrigeration.

(b) How food can be classified according to the ease of spoilage?

(2 + 2 + 2) + 6 = 12

Group – C

4. (a) What are the two main types of fermentation processes of food? What type of food industry is based on them?

(b) Discuss what different types of milk products can be produced depending on the following starter culture:
(i) lactic acid bacteria
(ii) bacteria and fungus
(iii) bacteria and yeast.

(2 + 1) + (3 × 3) = 12

5. (a) What is GMO?

(b) Discuss the molecular mechanism of production of FLAVR SAVR tomato.

3 + 9 = 12

Group – D

6. (a) Discuss role of gluten in food industry.

(b) Distinguish between glucose oxidase and glucose isomerase.

(c) What is delayed bitterness and how it is removed?

3 + 3 + 6 = 12

7. (a) Discuss the role of protease in baking industry.

(b) What is the function of lactase in dairy industry?

(c) What is stailing and how it is eliminated?

4 + 4 + 4 = 12

Group – E

8. (a) Name one pigment molecule present in food and write its function.

(b) Write any two intrinsic factors present in food and their role in food processing.

(c) What is the function of allicin present in garlic?

3 + 6 + 3 = 12

9. Briefly explain the mode of action of the followings: **(3 × 4) = 12**
(i) patulin.
(ii) humecants
(iii) chlorophyllase enzyme.

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BT	https://classroom.google.com/c/MjQyMDY2MTQ2Mjk0/a/Mjc1NTE3MDQ3NjE0/details