FOOD BIOTECHNOLOGY

(BIOT 4141)

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) Which of the following is responsible for fishy odour?
(a) Putrecsine (b) Cadaverine
(c) Tri-methyl amine (d) None of these.

(ii) Identify the food flavouring agent
(a) Diacetyl (b) Vanillin (c) Lycopene (d) Lipase.

(iii) Anthocyanins are
(a) isoprenoids (b) alkaloids (c) flavonoids (d) none of these.

(iv) Naringins are present in
(a) citrus fruits (b) leafy vegetables
(c) tree (d) sea weeds.

(v) Golden rice supplies the nutritional benefits of the following
(a) Iron (b) Vitamin A
(c) Both (a) and (b) (d) none of these.

(vi) Patulin is produced by
(a) *P. notatum* (b) *A. oryzae*
(c) *C .albicans* (d) *C. botulinum.*

(vii) Epoxide is a
(a) antioxidant (b) fat replacer
(c) preservative (d) artificial sweetener.

(viii) Enterotoxins are produced by
(a) *A. flavus* (b) *A. oryzae* (c) *A. niger* (d) *S.typhimurium.*

(ix) Acrylamide is produced during the production of
(a) Cheese (b) Beer (c) Bread (d) none of these.

(x) Sorbic acid is added in food as
(a) Emulsifier (b) preservative (c) antioxidant (d) gelatinizer

Group – B

2. (a) What are Rad-Appertization, Appertization, radurization, radicidation and picowaved?

(b) Mention the importance of pretreatments like sulphurization, blanching or scalding during food preservation.

5+ (2 + 5) =12

3. (a) What are the aerobic and anaerobic spoilage of meat?

(b) What is the most fatal food positioning? What is its causative organism? Discuss how Thermal Death Time is determined?

(3 + 3)+ ((1 + 1)+4)=12

Group – C

4. Describe production process of cheese. What are different major types of cheese produced industrially? Discuss role of proteolytic enzymes in the production of cheese.

(5+ 5 + 2)=12

5. (a) How mushroom can be used as SCP?

(b) Describe schematically the production process of white button mushroom.

4 + 8 =12

Group – D

6. (a) Why regiospecific lipase is used in oil industries?

(b) What is lactose intolerance?

(c) What is HFCS and how it is prepared?

3+ 3 + 6 =12

7. (a) How sweet wine is prepared?

(b) Why amylase specifically used in beer production but not in wine production?

(c) Write down the mode of action of raffinase, glucose isomerase and lipase.

2+ 4 + 6 =12

Group – E

8. (a) Briefly explain the mode of action of Ergot alkaloids.

(b) What is humecant and write its mode of action?

(c) Why green vegetables change their colour during storage?

4 +4 + 4 =12

9. (a) Name one natural antioxidant and how does it prevent oxidative reaction?

(b) Write notes on metal contaminants present in food.

(c) What is the function of allium present in onion?

4+ 5 + 3 = 12