

**ADVANCED FOOD BIOTECHNOLOGY
(BIOT 5242)**

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) The example of oil-in-water emulsion is
 - (a) Mayonnaise
 - (b) Butter
 - (c) Espresso coffee
 - (d) Salad dressing
- (ii) A vegetarian substitute for gelatin is
 - (a) Alginic acid
 - (b) Xanthan gum
 - (c) Guar gum
 - (d) Agar-agar
- (iii) Broccoli contains the following Nutraceutical
 - (a) Sulphoraphane
 - (b) Docosahexanoic acid
 - (c) MUFA
 - (d) Linoleic acid
- (iv) The example of NSP
 - (a) β -glucan
 - (b) Chitin
 - (c) Glycosaminoglycan
 - (d) All of the above
- (v) Saponins are detected by
 - (a) Hemolytic activity
 - (b) Surface active properties
 - (c) Both
 - (d) None
- (vi) Propionic acid is mainly used in preparation of
 - (a) Bread
 - (b) Fructose syrup
 - (c) Cheese
 - (d) None of these
- (vii) Smooth surface of ice cream is mainly due to presence of
 - (a) Lactase
 - (b) Amylase
 - (c) cellulase
 - (d) None of these
- (viii) Spoilage of green vegetables can be prevented by
 - (a) Lactase
 - (b) Chlorophyllase
 - (c) Amylase
 - (d) None of these

- (ix) Allium present in onion is a
 (a) Colouring agent (b) Flavouring agent
 (c) Humecant (d) None of these
- (x) Ethylene oxide is
 (a) Gaseous sterilising agent (b) solid sterilising agent
 (c) Liquid sterilising agent (d) None of these

Fill in the blanks with the correct word

- (xi) Botulin is type of _____.
- (xii) Chill hazing is very common in _____ production.
- (xiii) Pimpirin acts as an _____.
- (xiv) Mustard powder is added in food as _____.
- (xv) Insoluble dietary fibre helps to prevent _____.

Group - B

2. (a) What are emulsion food? Give examples of different classes of emulsion food. [[CO3](Analyse/HOCQ)]
 (b) What is the role of emulsifier in food industry? Elaborate giving suitable example. [[CO4](Apply/IOCQ)]
(3 + 3) + (3 + 3) = 12
3. (a) What are thickeners? What is their role in food industry? [[CO3](Analyse/HOCQ)]
 (b) Give examples of food gum obtained from the following sources:
 Bacteria, Plant, Sea weed, Algae. [[CO1](Remember/LOCQ)]
 (c) Mention the role of lecithin in mayonnaise. [[CO2](Apply/IOCQ)]
(2 + 2) + 4 + 4 = 12

Group - C

4. (a) Analyse the advantages and disadvantages of good quality protein. [[CO3](Analyse/HOCQ)]
 (b) Describe briefly how membrane bound antioxidant eliminate ROS. [[CO4](Remember/LOCQ)]
 (c) Explain how size of food particle and pH involved in spoilage reaction. [[CO2](Apply/IOCQ)]
5 + 3 + 4 = 12
5. (a) Analyse with suitable example foodborne infection process. [[CO3](Analyse/HOCQ)]
 (b) What are the advantages and disadvantages of chlorophyllase enzyme? [[CO4](Remember/LOCQ)]
 (c) Illustrate the term ergotism. [[CO2](Apply/IOCQ)]
5 + 4 + 3 = 12

Group - D

6. (a) Discuss the role of the following as food supplements:
Chitin, Inulin. [[CO5](Analyse/HOCQ)]
(b) What is the FDA approved daily intake of Psyllium seed husk? Mention the
beneficial effect of taking it regularly. [[CO4](Remember/IOCQ)]
(3 + 3) + (1 + 5) = 12
7. (a) Mention the role of Curcumin as nutraceutical. [[CO6](Analyse/HOCQ)]
(b) Explain how it is solubilised. [[CO4](Remember/LOCQ)]
(c) Mention the role of GPC in regular diet. How it can be obtained? [[CO6](Apply/IOCQ)]
4 + 4 + 4 = 12

Group - E

8. (a) Define food additives. [[CO3](Analyse/HOCQ)]
(b) Mention any three natural food preservatives and their mode of action. [[CO4](Remember/LOCQ)]
(c) Illustrate the role of EDTA. [[CO2](Apply/IOCQ)]
(d) Discuss the role of parabens. [[CO2](Apply/IOCQ)]
2 + 5 + 3 + 2 = 12
9. (a) Explain why chlorophyll containing food changes their colour? [[CO3](Analyse/HOCQ)]
(b) Mention two bacterial exotoxins and their mode of action. [[CO4](Remember/LOCQ)]
(c) Discuss the role of sulphur dioxide as food preservative. [[CO2](Apply/IOCQ)]
4 + 4 + 4 = 12

Cognition Level	LOCQ	IOCQ	HOCQ
Percentage distribution	29.16	33.33	37.51

