

M.TECH/BT/2ND SEM/BIOT 5242/2015
2015

Advanced Food Biotechnology
(BIOT 5242)

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 x 1=10

(i) Major pathogen detected in Prawn is

- (a) *Bacillus* sp (b) *Vibrio* sp
(c) *Samonella* sp (d) None.

(ii) Allergens in food are chemically

- (a) a protein (b) a polysaccharide
(c) Sugar (d) None.

(iii) Bacteria causing Tuberculosis is present mainly in

- (a) Fruit juice (b) Meat
(c) Bovine milk (d) Egg.

(iv) Pathogenic Salmonella are confirmed by

- (a) Seological methods (b) Biochemical methods
(c) Microscopic methods (d) None.

(v) Major mycotoxins are produced by selected strains of

- (a) *Aspergillus* (b) *Penicillium*
(c) *Trichoderma* (d) None.

(vi) Aspartame is

- (a) an aminoacid (b) a dipeptide
(c) a carbohydrate (d) a nucleic acid.

(vii) Emulsifying agent present in Egg is:

- (a) Egg white (b) Egg shell
(c) Egg yolk (d) None.

(viii) Calcium propionate is used as preservative in

- (a) Fruit Juice (b) Bakery
(c) Meat product (d) None.

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- (ix) Curcumin is obtained from:
- | | |
|------------------------------------|--------------------------|
| (a) solvent extraction of turmeric | (b) Alkali precipitation |
| (c) Acid hydrolysis | (d) Homogenization. |
- (x) Acyl thioesterase enzyme involved in the genetic modification of
- | | |
|------------------|-------------------|
| (a) Plant oil | (b) Protein |
| (c) Carbohydrate | (d) none of them. |

Group - B

2.(a) What is an emulsion food? Give two examples.

(b) What is the function of an emulsifier? What are different emulsifying agents used in food products?

(c) Write short note on Mayonnaise production.

(1+1)+(2+2)+6=12

3. Write short notes on :

- i) Soluble and insoluble dietary fiber
- ii) Alternative sweetener

(2x6)=12

Group - C

4. Discuss quality control measures under taken for the detection of:

- i) Pesticide residue
- ii) Salmonella contamination in food

(2x6)=12

5.(a) What is allergic reaction of any food and how is it manifested?

(b) What is food allergen?

(c) Why some allergens threaten our health seriously?

(d) What are different classes of foods generally found to cause allergic reaction?

(e) How allergens are preliminary detected?

4 + 2+2+2+2=12

Group - D

6.(a) Define nutraceutical.

(b) Write the nutritional importance of dietary fibre.

(c) Mention the importance of DHA and PUFA as nutraceutical.

(d) Give an account of toxic components present in cereals.

3+3+3+3=12

7.(a) How genetic engineering techniques can be exploited for detoxification of food components?

(b) What are functional foods?

(c) Mention the different classes of nutraceuticals with one example from each.

3+2+7=12

Group - E

8. Write short notes on:

i) Vitamin fortification in food

ii) Importance of mineral fortification in food

(2x6)=12

9.(a) What is antioxidant?

(b) What are common foods having antioxidant properties?

(c) Describe the process of enhancement of antioxidant production in food.

3+2+7=12