

B.TECH / BT /7TH SEM/ BIOT 4141/2017
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) Lipoxygenase is used to improve quality of
(a) cheese (b) fruit juice
(c) bread (d) none of these.
- (ii) Renin is used for production of
(a) bread (b) fructose syrup
(c) dextrose syrup (d) cheese.
- (iii) Which one of the following is a food pigment?
(a) Diacetyl (b) Vanillin
(c) Lycopene (d) Lipase.
- (iv) Flavonoids are present in
(a) citrus fruits (b) leafy vegetables
(c) tree (d) sea weeds.
- (v) Stale fishy odor is due to
(a) histamine (b) spermidine
(c) tri methylamine (d) trimethyl oxide.
- (vi) Golden rice replenishes the deficiency of
(a) vitamin A (b) vitamin D
(c) vitamin B1 (d) vitamin B5.
- (vii) Aflatoxins are produced by
(a) P. notatum (b) A. oryzae
(c) C. albicans (d) C. botulinum.

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- (viii) Benzoic acid is added in food as
(a) antioxidant (b) emulsifier
(c) preservative (d) fat replacer.
- (ix) Must is produced during the production of:
(a) Cheese (b) Beer (c) Wine (d) none of these.
- (x) Genetically modified food can be analyzed by
(a) PCR (b) potentiometric technique
(c) thermal sensors (d) titration.

Group - B

2. (a) Define graphically the following terms:
i) Cold point temperature
ii) Decimal reduction time
iii) TDT curve
(b) What is the importance of 12D cycle?
(3 × 3) + 3 = 12
3. (a) Discuss the different types of spoilage happening in milk.
(b) How they can be prevented?
(c) What is the most common food toxin produced by bacteria? What is the physiological role of the toxin protein?
6 + 2 + 4 = 12

Group - C

4. (a) Elaborate with example the role of lactic acid fermenting bacteria in different stages of sauerkraut fermentation.
(b) What is the role of salt concentration in this fermentation?
(c) Write the production process of cucumber pickle.
6 + 3 + 3 = 12
5. (a) Explain the importance of mushroom as SCP. Name one poisonous mushroom.
(b) Describe schematically the production process of any one edible mushroom.
6 + 6 = 12

Group - D

6. (a) Discuss the role of gluten in dough formation.
(b) Briefly describe the role of different enzymes in production of bread.
3 + 9 = 12
7. (a) What are different steps of beer production and mention different enzymes that are used in each step.
(b) Write the difference between lactase and raffinase.
8 + 4 = 12

Group - E

8. (a) What is rancidity and putrefaction?
(b) Explain the mode of action of aflatoxin.
(c) What is humicant and mention its mode of action.
3 + 5 + 4 = 12
9. (a) Write notes on metal contaminants present in food.
(b) What are antioxidants and write their mode of action.
6 + 6 = 12