B. Sc. Biotechnology
Fourth Semester
Food & Industrial Biotechnology
(BBT- 19)

Duration: 3Hrs. **Full Marks: 70**

PART A (Objective) =20
PART-B (Descriptive)=50

PART-B (Descriptive)

Duration: 2 hrs. 40 mins. **Marks: 50**

I. Answer any three of the following questions: **7×3=21**

1. What do you understand by immobilization of enzymes? Why immobilized enzymes are advantageous over the free enzymes? 2+5=7
2. What is the major purpose of food preservation? Discuss in brief the merits and drawbacks of various food preservation techniques you have studied. 2+5=7
3. Write a brief explanatory note on microbial spoilage of food material during storage. 7
4. Discuss briefly the various measures for controlling post harvest spoilage of grains. 7

II. Add brief notes on the following (any four): **5×4=20**

1. Fermented food products from NE India.
2. Therapeutic value of fermented foods.
3. Milk born diseases in man.
4. Conditions for food storage.
5. Salient features of an ideal fermenter.

III. Briefly explain the conditions necessary for the commercial production of acetic acid. Discuss the production of acetic acid following generator process. 6+3=9

Or

Discuss the mechanism of enzyme immobilization. 9

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REV-00
BBT/24/30

2014/06

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Duration: 20 minutes **Marks – 20**

PART-A (Objective)

Time: 20 mins **Total Marks: 20**

I. Choose the correct option for the following questions: **1×15=15**

1. The concept of conversion of ethanol to acetic acid by Acetobacter sp. was given by _____.
   a) Louis Pasteur
   b) Kutzin
   c) Paul Ehrlich
   d) von Behring

2. Crohn's disease in man is caused by_____.
   a) Mycobacterium avium
   b) Campylobacter jejuni
   c) Coxiella burnetii
   d) Bacillus cereus

3. Conversion of antibiotic penicillin into inactive penicilloic acid is brought about by the enzyme _____.
   a) protease
   b) β-lactamase
   c) kerazyme
   d) invertase

4. Mycotoxin ergotine in berley is produced by _____.
   a) Cleviceps purpurea
   b) Aspergillus niger
   c) Escherichia coli
   d) Serratia marcescens

5. Inactivation of food enzymes by heating to avoid self decomposition of food material is called _____.
   a) blanching
   b) asepsis
   c) osmolysis
   d) none of the above

6. Proteus vulgaris is responsible for _____ in egg.
   a) soft rot
   b) red rot
   c) black rot
   d) green rot

7. Roquefort, camembert and brie are types of _____.
   a) cheese
   b) kefir
   c) yogurt
   d) soy sauce

8. Hawaijar, a fermented food product of Manipur is produced by fermenting _____.
   a) fish
   b) milk
   c) soy bean
   d) cabbage

9. Bacterium carvum is used in the production of vinegar by _____ process.
   a) Orleans or French
   b) quick vinegar or German
   c) both a) and b)
   d) none of the above

10. Honey falls under the food materials that are _____.
   a) non-perishable
   b) semi-perishable
   c) highly perishable
   d) None of the above

11. Vitamin riboflavin is industrially produced by exploiting _____.
   a) Aspergillus niger
   b) Ashbya gossypi
   c) Clostridium acetobutylicum
   d) Aspergillus oryzae

12. Soft rot of food material occurs due to microbial degradation of _____.
   a) carbohydrate
   b) lipid
   c) protein
   d) pectin

13. Raw material used for the production of bread vinegar is _____.
   a) distilled alcohol
   b) grape juice
   c) berley
   d) molasses

14. The phenomenon of enzyme immobilization was first reported by _____.
   a) G. Rossi and N. Colondi
   b) Robertis and Robertis
   c) Dubey and Maheswari
   d) J. M. Nelson and E. G. Griffin

15. Egg albumin is resistant to microbial spoilage due to the presence of enzyme _____.
   a) protease
   b) lysozyme
   c) kerazyme
   d) zymase

II. Match column A (product) with column B (microbe involved): 1x5=5

A	B
a) Acetone	a) Escheria coli
b) Amylase	b) Aspergillus oryzae
c) Xanthan gum	c) Aspergillus phoenicus
d) Somatostanin	d) Trichoderma reesii
e) ά-amylase	e) Clostridium acetobutylicum
	f) Xanthomonas campestris

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