

B.Sc. BIOTECHNOLOGY
4TH SEMESTER
FOOD & INDUSTRIAL BIOTECHNOLOGY
BBT-404

Duration: 3 Hrs.

Marks: 70

{ Part : A (Objective) = 20 }
{ Part : B (Descriptive) = 50 }

[PART-B : Descriptive]

Duration: 2 Hrs. 40 Mins.

Marks: 50

[Answer question no. One (1) & any four (4) from the rest]

1. What do you understand by enzyme immobilization? What are the carrier materials in enzyme immobilization? State the different types of techniques in enzyme immobilization? Mention some advantages and disadvantages of enzyme immobilization? 1+2+3+4 =10
2. Write about the use of the enzymes amylase, lipase and protease in the food industry? 10
3. What do you understand by food laws. What are the roles of BIS, AGMARK, HACCP, and *Codex Alimentarius* Laws 10
4. What is botulism. What are the different types. Write briefly about Food and Mouth Disease and Rabies? 5+5=10
5. What are the different types of chemical preservatives. Describe any three of them. 2+8=10
6. *Write short notes on :* 5+5=10
 - (a) trichinosis
 - (b) judima(rice beer) or tungtap (fermented fish)
7. How storage of meat, milk and grain is done, describe briefly. 10
8. What are the prebiotic and probiotic microorganisms? What do you understand by bacteriocin and how it helps in preserving food? 4+6=10

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[PART-A : Objective]

Choose the correct answer from the following:

1X20=20

1. The food standard programme of which organization is called Codex Alimentarius
a. FAO
 b. UNESCO
c. UNICEF
d. Medicine sans Frontiers
2. Erythrotoxic toxin -A is produced by which bacteria
 a. *Streptococcus scarlatina*
b. *Bacillus thuringiensis*
c. *Bacillus subtilis*
d. *Mycobacterium tuberculosis*
3. What type of disease is rabies
 a. Bacterial
b. Fungal
c. Avian
d. Viral
4. What does *Coxiella burnetii* cause
 a. Tuberculosis
b. Anthrax
c. Q-Fever
d. Listeriosis
5. Inflammation of which part of the body is observed in case of poliomyelitis
 a. Central nervous system
b. Liver
c. Spinal Cord
d. Lymph node
6. Salk polio vaccine is
 a. Oral
b. Aqueous
c. Live
d. Inactivated
7. Essential Commodities Act was formulated in
a. 1991
b. 1956
c. 1945
d. 1954
8. The main sugar for activity and viability of *Brucella aborta*
a. Sorbitol
b. Sucrose
c. Mannose
d. None of the above
9. The Prevention of Food and Adulteration Act came into force in
a. July 1st 1954
b. June 1st 1954
c. June 1st 1955
d. July 1st, 1955
10. In enzyme immobilization, enzyme is immobilized within
a. Cellulose
b. Chitosan
c. Agarose
d. All of the above
11. Botulism is caused by
a. *Clostridium botulinum*
b. *Bacillus subtilis*
c. *Salmonella typhi*
d. None of the above
12. Following is a mycotoxin
a. *Aspergillus*
b. *Bacillus*
c. *Staphylococcus*
d. All of the above
13. GRAS means
a. Generally recognized as safe
b. Generally recommended as safe
c. Grossly recommended as safe
d. General recommendation of American safety
14. Antibiotics are a type of
a. Chemical preservative
b. Biological preservative
c. Physical preservative
d. None of the above

15. Bacteriocins are
- a. Chemical preservative
 - b. Biological preservative
 - c. Physical preservative
 - d. None of the above

16. Xaaj-paani is a type
- a. Fermented bamboo shoot
 - b. Fermented cabbage
 - c. Traditional rice beer
 - d. None of the above

17. Lactobacillus are
- a. Probiotics
 - b. Antibiotic
 - c. Colouring agent
 - d. None of the above

18. The starter culture or koji for preparation of 'miso' (fermented soyabean) is
- a. Aspergillus oryzae
 - b. Staphylococcus aureus
 - c. Bacillus licheniformis
 - d. All of the above

19. Following is a microbial antagonist
- a. Sulfur dioxide
 - b. Hydrogen peroxide
 - c. Benzoic acid
 - d. All of the above

20. Which of the following can cause harm in storage of grain
- a. Insect
 - b. Rodent
 - c. microbes
 - d. All of the above

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UNIVERSITY OF SCIENCE & TECHNOLOGY, MEGHALAYA



Question Paper CUM Answer Sheet

PART (A) : OBJECTIVE

Serial no. of the main Answer sheet

Course :

Semester : Roll No :

Enrollment No : Course code :

Course Title :

Session : 2016-17 Date :

Instructions / Guidelines

- The paper contains twenty (20) / ten (10) questions.
- The student shall write the answer in the box where it is provided.
- The student shall not overwrite / erase any answer and no mark shall be given for such act.
- Hand over the question paper cum answer sheet (Objective) within the allotted time (20 minutes / 10 minutes) to the invigilator.

Full Marks	Marks Obtained	Remarks
20		

Scrutinizer's Signature

Examiner's Signature

Invigilator's Signature