

M.Sc. MICROBIOLOGY
FOURTH SEMESTER
FOOD MICROBIOLOGY & FERMENTATION TECHNOLOGY
MMB - 402C

(Use Separate Answer Scripts for Objective & Descriptive)

Duration : 3 hrs.

Full Marks : 70

(PART-A: Objective)

Time : 20 min.

Marks : 20

Choose the correct answer from the following:

1X20=20

1. The maximum limit for moisture content for growth of microbes is almost
 - a. 0
 - b. >1
 - c. <1
 - d. None of the above
2. Colletotrichum causes
 - a. Downy mildew
 - b. Anthracnose
 - c. Black mold rot
 - d. formation of flocks
3. Soil belongs to.....of contamination.
 - a. Secondary source
 - b. Primary Source
 - c. Tertiary source
 - d. None of the above
4. Buttermilk like flavor in citrus fruits is caused by
 - a. E.coli
 - b. Aspergillus
 - c. Lactobacilli and Leuconostoc
 - d. None of the above
5. Phylloplane is the surface related to
 - a. Root
 - b. Plant
 - c. Leaf
 - d. Soil
6. Bloody diarrhea and mucus in stool is a symptom of
 - a. Salmonellosis
 - b. Shigellosis
 - c. Staphylococcus food poisoning
 - d. Botulism
7. Aflatoxin is produced by
 - a. Aspergillus flavus
 - b. Aspergillus parasiticus
 - c. Aspergillus niger
 - d. Both (a) & (b)
8. The secondary metabolites produced by *Claviceps purpurea* is known as _____
 - a. Aflatoxin
 - b. Citrinin
 - c. ergot alkaloids
 - d. Fumonisin
9. Drying can be done through
 - a. Evaporation of water from the food
 - b. Lowering A_w value
 - c. Addition of salt and sugar
 - d. All of the above
10. Temperature and time required for Vat pasteurization is
 - a. 62.8°C for 30 minutes
 - b. 62.8°C for 2 minutes
 - c. 52.8°C for 30 minutes
 - d. 71.7°C for 30 minutes

11. Agar-agar is used as:
- a. Antibiotic
 - b. Stabilizer and thickener
 - c. Colouring agent
 - d. Nutrient supplement
12. Which of the following is true about bacteria;
- a. Bacteria multiply and grow faster in warm environments.
 - b. Bacteria need air to survive.
 - c. Every type of bacteria can give people food poisoning.
 - d. By freezing food you can kill bacteria.
13. Which of the following is a factor that affects the storage stability of food?
- a. Type of raw material used
 - b. Quality of raw material used
 - c. Method/effectiveness of packaging
 - d. All of the above
14. Which one of the following is not a chemical preservative found in food?
- a. Sulphur dioxide
 - b. Sorbic acid
 - c. Sodium nitrate
 - d. Carbon dioxide
15. Which of the following is NOT an advantage of dehydration under controlled conditions over sun drying?
- a. Cost
 - b. Time of drying
 - c. Quality of drying
 - d. None of the mentioned
16. Which of the following factor of food is considered as intrinsic factor from food safety point of view
- a. Water activity (a_w)
 - b. Relative humidity
 - c. Temperature
 - d. Vapour pressure
17. Production of _____ occurs in the fermentation of grains
- a. Must
 - b. Brine
 - c. Lactic acid
 - d. Carbon dioxide
18. The "eyes" in swiss cheese are formed by the growth of-
- a. *Leuconostoc*
 - b. *Propionibacterium*
 - c. *Streptococcus*
 - d. *Lactobacillus*
19. Of the listed below products, which contains no dairy ingredients?
- a. Casein
 - b. Whey
 - c. Custard
 - d. Sorbet
20. The Primary Milk carbohydrate is -
- a. Lactose
 - b. Sucrose
 - c. Arginin
 - d. Leucine

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(PART-B : Descriptive)

Time : 2 hrs. 40 min.

Marks : 50

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

1. Define fermentation and explain its advantage in food preservation? 10
2. Define mycotoxins. Describe briefly the major mycotoxins found in food. 2+8=10
3. Describe briefly about the intrinsic and extrinsic parameters of food spoilage. 10
4. Discuss the physical methods for preservation of foods 10
5. Write a short note on *(any two)* 5+5=10
 - a. Canning
 - b. Microbial spoilage of raw milk
 - c. Preservation by chemical preservatives
6. Write one procedure of fermented product each from 5+5=10
 - a. Vegetable and
 - b. Fruit and write the microorganism involved in the production of these?
7. Write a short note on Single cell protein and Genetically modified food. 5+5=10
8. Describe the biochemical pathway in the production of ethanol? 10

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