

M.Sc. BIOTECHNOLOGY
FIRST SEMESTER (SPECIAL REPEAT)
MICROBIOLOGY
MBT-103
[USE OMR SHEET FOR OBJECTIVE PART]

SET
A

Duration: 3 hrs.

Full Marks: 70

Time: 30 mins.

Marks: 20

(Objective)

1 × 20 = 20

Choose the correct answer from the following:

-media is used to observe bacterial movement.
a. Solid
b. Liquid
c. Semi-solid
d. None
- Phylosphere includes:
a. Phylloplane
b. Carposporophyte
c. Carposphere
d. Both a and c
- Vaucheria* is an example of:
a. Coenocytic algae
b. Filamentous algae
c. Parenchymatous algae
d. Red algae
- The connection between genetics and microbiology was given by:
a. Knoll and Ruska
b. Alexander Fleming
c. Chamberland
d. Beadle and Tatum
- Spores of bacteria found in soil are:
a. Endospores
b. Chlamydospores
c. Sclerotia
d. All of the above
- Arbuscular mycorrhiza is also called:
a. Ectomycorrhiza
b. Fungi
c. Endomycorrhiza
d. Algae
- Stuart's media is an example of:
a. Complex media
b. Transport media
c. Differential media
d. Selective media
- Fungus falls in the plant kingdom:
a. True
b. False
c. Maybe
d. Can't say
- Cottony growth of mold in fruits is a characteristic of:
a. Penicillium
b. Yeast
c. Rhizopus
d. Pseudomonas
- The primary microbial challenge for poultry is:
a. Yeast
b. Penicillium
c. E.coli
d. Salmonella

11. Obligate anaerobe signifies:
- a. Require O₂ at less than atmospheric level
 - b. They require sufficient amount of O₂
 - c. Oxygen may be harmful
 - d. Grow well in presence as well as absence of oxygen
12. Hartig net is formed by:
- a. Endomycorrhiza
 - b. Plants
 - c. Ectomycorrhiza
 - d. Soil
13. Which microscope is used to observe topography of specimen?
- a. Atomic Force Microscopy
 - b. Phase contrast microscopy
 - c. Electron microscopy
 - d. DIC
14. Vaccine was first discovered by:
- a. Joseph Lister
 - b. Edward Jenner
 - c. Francesco Redi
 - d. Knoll
15. Blackleg disease of potato is caused by:
- a. Pseudomonas
 - b. Aspergillus
 - c. Erwinia
 - d. Bacillus
16. Bacteria with a tuft of flagella on both ends is called:
- a. Amphitrichous
 - b. Monotrichous
 - c. Peritrichous
 - d. Amphiphotrichous
17. Small circular RNA molecules that infect plants are called:
- a. Virusoids
 - b. Viroids
 - c. Prions
 - d. None
18. Organisms which have no control of their movement are called:
- a. Planktons
 - b. Nektons
 - c. Benthos
 - d. None
19. Aniline dye is more active against Gram negative bacteria.
- a. True
 - b. False
 - c. Maybe
 - d. Can't say
20. The a_w value of dehydrated food is:
- a. 1
 - b. 2
 - c. 3
 - d. None of the above
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(Descriptive)

Time : 2 hr. 30 mins.

Marks : 50

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

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|---|--------------|
| 1. Explain briefly the various sources of microorganisms causing food spoilage. | 10 |
| 2. Explain the process of nitrogen fixation in detail. Give suitable diagrams | 10 |
| 3. Who discovered Gram Staining? Describe the principle, procedure and application of Gram Staining. Give appropriate diagrams. | 1+2+5+1+1=10 |
| 4. a) What is electron microscopy? Write about the sample preparation. What are its types? Describe. | 6 |
| b) What do you mean by Selective media and Differential media? Describe with examples. | 2+2=4 |
| 5. a) Describe the different life cycles of algae with diagrams. | 6 |
| b) Differentiate between lytic and lysogenic life cycle of viruses. What are fungi? Give their major groups with examples. | 2+1+1=4 |
| 6. Explain about the different kinds of sterilization techniques used in a laboratory. | 10 |
| 7. Write a note of the following:
a) Microbial spoilage of Canned foods
b) Physical method of preservation of food | 5+5=10 |
| 8. Write short notes on:
a) Experiment to disprove Theory of Abiogenesis
b) Koch's postulates | 5+5=10 |

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