

**B.Sc. BOTANY
FOURTH SEMESTER
MICROBIOLOGY**

**SET
A**

BSB-401

[USE OMR SHEET FOR OBJECTIVE PART]

Duration: 3 hrs.

Full Marks: 70

Time: 30 mins.

(Objective)

Marks: 20

Choose the correct answer from the following:

1 × 20 = 20

- Which of the following is not considered as a Kingdom under the Five Kingdom Classification?
 - Plantae
 - Monera
 - Fungi
 - Protozoa
- What types of colonies are formed by mycoplasmas on agar plate?
 - Colorless colonies
 - Colored colonies
 - Lawn formation
 - Fried-egg colonies
- Which of the following is not a characteristic of mycoplasmas?
 - Lack cell wall
 - Eukaryotic like organisms
 - Parasitic or saprotrophic
 - Absence of cell wall
- The even distribution of flagella all over the body is called:
 - Lophotrichous
 - Amphitrichous
 - Peritrichous
 - Monotrichous
- Which of the following is not a virus?
 - HIV
 - Vibrio
 - Bacteriophage
 - None of the above
- Which of the following instrument is used to perform tyndalization?
 - Autoclave
 - Arnold Sterilizer
 - Gas oven
 - Incubator
- Gram staining was developed by:
 - Louis Pasteur
 - Robert Koch
 - Christian Gram
 - Gerald Cevani
- Name the type of bacteria which uses CO₂ as the sole source of carbon for growth?
 - Autotrophs
 - Heterotrophs
 - Organotrophs
 - Lithotrophs
- The statements of Koch postulates were refined and published by Koch in:
 - 1890
 - 1885
 - 1894
 - 1902
- Who is regarded as the Father of bacteriology?
 - Anton van Leeuwenhoek
 - Robert Koch
 - Louis Pasteur
 - Robert Hook

11. All components extracted from the roots are called as:
 - a. Plant metabolites
 - b. Rhizoremediation
 - c. Rhizodeposits
 - d. None of the above
12. The region in the soil where maximum microbial activities occurs is:
 - a. Spermosphere
 - b. Rhizosphere
 - c. Rhizoplane
 - d. Bulk soil
13. The protein present in the bacterial cell wall responsible for bacterium-plant attachment in root nodule formation is:
 - a. Adhesin
 - b. Cadherin
 - c. Rhicadhesin
 - d. Integrin
14. Which of the following forms of nitrogen can be taken up by living organisms?
 - a. NH_3 and NO_2
 - b. NH_3 and NH_4
 - c. NH_3 and NO_3
 - d. a and b
15. The air microorganism *Streptococcus gallolyticus* causes:
 - a. Allergy
 - b. Respiratory infections
 - c. Pink eye disease
 - d. Skin infection
16. The branch of science which deals with fermentation is called:
 - a. Zymology
 - b. Fermetology
 - c. Pedology
 - d. Cereology
17. The pathogenic microorganisms which is common in sea foods is:
 - a. *Clostridium botulinum*
 - b. *Vibrio parahaemolyticus*
 - c. *Staphylococcus aureus*
 - d. *Lactobacillus plantarum*
18. Food borne pathogens commonly found in meat and poultry products are:
 - a. Molds
 - b. Yeast and Molds
 - c. Fungi
 - d. Bacteria
19. Which of the following is not a beneficial milk microorganism?
 - a. *Lactobacillus plantarum*
 - b. *Lactococcus lactis*
 - c. *Achromobacter piechaudii*
 - d. *Saccheromyces cerevisiae*
20. Who is known as the Father of Modern Microbiology?
 - a. Alexander Fleming
 - b. Anton van Leeuwenhoek
 - c. Louis Pasteur
 - d. Robert Koch

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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. Define rhizosphere. Discuss the role of rhizospheric microorganisms on plants under biotic stress. | 2+8=10 |
| 2. Who proposed the Five Kingdom concept of classification? Discuss in brief the Five Kingdom system of classification. | 1+9=10 |
| 3. What is transduction? Describe the different types of transduction studied by you with suitable diagrams. | 2+8=10 |
| 4. Write note on:
a) Physical control of microorganisms
b) Chemical control of microorganisms | 2×5=10 |
| 5. Write in brief the Germ theory of diseases and Koch postulates. | 3+7=10 |
| 6. Write short notes on:
a) Air microbiology
b) Formation of root nodules | 2×5=10 |
| 7. What do you understand by food microbiology? Write short notes on:
a) Food spoilage
b) Food poisoning
c) Food preservation | 1+3+3+3=10 |
| 8. Discuss on milk and milk products and sources of microorganisms in milk. | 10 |

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