

**B.Sc. BOTANY  
SECOND SEMESTER  
GENERAL MICROBIOLOGY  
BSB-201**

**SET  
A**

[USE OMR SHEET FOR OBJECTIVE PART]

Duration: 3 hrs.

Full Marks: 70

**( Objective )**

Time: 30 mins.

Marks: 20

*Choose the correct answer from the following:*

*1 × 20 = 20*

- The genetic material of virus consists of either:
  - DNA
  - RNA
  - DNA or RNA
  - ss-DNA or ss-RNA
- Which of the following is osmotically inactive?
  - Bacteria
  - Mycoplasma
  - Nostoc
  - Yeast
- What types of colonies are formed by mycoplasmas on agar plate?
  - Colorless colonies
  - Colored colonies
  - Lawn formation
  - Fried-egg colonies
- A cluster of polar flagella is called:
  - Lophotrichous
  - Amphitrichous
  - Monotrichous
  - Peritrichous
- Viruses that attack bacteria are called:
  - Lyophage
  - Bacteriophage
  - Vivophage
  - None of the above
- Which of the following instrument is used to perform tyndalization?
  - Autoclave
  - Arnold Sterilizer
  - Gas oven
  - Incubator
- Germ theory of diseases was proposed by:
  - Robert Koch
  - L. Pasteur
  - Jenner
  - Anton van Leeuwenhoek
- Gram staining was developed by:
  - Louis Pasteur
  - Robert Koch
  - Christian Gram
  - Gerald Cevani
- Name the type of bacteria which uses CO<sub>2</sub> as the sole source of carbon for growth.
  - Organotrophs
  - Heterotrophs
  - Autotrophs
  - Lithotrophs
- Who is regarded as the Father of bacteriology?
  - Anton van Leeuwenhoek
  - Robert Koch
  - Louis Pasteur
  - Robert Hook

11. The extra chromosomal DNA present in a bacterial cell is called:
  - a. Pilus
  - b. Plasmid
  - c. Ribosome
  - d. Phagemid
12. Which of the following is a characteristic of fungi?
  - a. Budding
  - b. Gram positive
  - c. Prokaryotic
  - d. Hyphae
13. Which of the following microbiome is the most complex and significant?
  - a. Spherosphere
  - b. Rhizosphere
  - c. Phyllosphere
  - d. Hydrosphere
14. Fine compact intracellular coils are found in:
  - a. Ericoid mycorrhiza
  - b. Arbuscularmycorrhiza
  - c. Ectomycorrhiza
  - d. Orchidaceous mycorrhiza
15. The dark colored, amorphous substances formed during organic matter decomposition is called:
  - a. Mull
  - b. Debris
  - c. Moder
  - d. Humus
16. Nitrogen fixation does not occur through:
  - a. Industrial fixation
  - b. Biological fixation
  - c. Hydrological fixation
  - d. Atmospheric fixation
17. Photosynthetic-Respiratory pathway is an example of:
  - a. Short term carbon cycle
  - b. Medium term carbon cycle
  - c. Long term carbon cycle
  - d. None of the above
18. In phosphorus cycle, which medium do not play significant role?
  - a. Soil
  - b. Atmosphere
  - c. Lithosphere
  - d. Hydrosphere
19. Infection threads are formed during:
  - a. Nitrogen fixation
  - b. Phosphorus uptake
  - c. Root nodule formation
  - d. Nutrient secretion
20. Microorganisms found in the atmosphere are called:
  - a. Particulate matters
  - b. Bioaerosols
  - c. Air pollutants
  - d. Aerosols

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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. Who proposed the Five Kingdom concept of classification? Discuss in brief the Five Kingdom system of classification.                       | 1+9=10 |
| 2. What is transformation? Describe in detail the steps involved during transformation with suitable diagram.                                 | 2+8=10 |
| 3. Write a note on:<br>a) Physical control of microorganisms.<br>b) Chemical control of microorganisms.                                       | 2×5=10 |
| 4. Write in brief the Germ theory of diseases and Koch postulates.  | 3+7=10 |
| 5. Write short notes on:<br>a) Role of microorganisms in soil fertility.<br>b) Role of rhizospheric microorganisms in promoting plant health. | 2×5=10 |
| 6. Write notes on:<br>a) Arbuscularmycorrhizal fungi with appropriate diagram.<br>b) Steps involved in organic matter decomposition.          | 2×5=10 |
| 7. What is nitrogen fixation? Write note on the biological nitrogen fixation.   | 2+8=10 |
| 8. Write short notes on:<br>a) Air microbiology<br>b) Water microbiology  | 2×5=10 |

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