

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

**SET  
A**

[USE OMR SHEET FOR OBJECTIVE PART]

Duration: 3 hrs.

Full Marks: 70

Time: 30 mins.

Marks: 20

**(Objective)**

*1 × 20 = 20*

*Choose the correct answer from the following:*

- 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 elimination of pathogenic fungi by antagonist fungi is known as:
  - a. Mycoparasitism
  - b. Antagonism
  - c. Hyperparasitism
  - d. All of the above
12. Nitrogen fixation in paddy rice cultivation is achieved mainly through:
  - a. *Nostoc-Anabaena*
  - b. *Azolla-Anabaena*
  - c. *Oryza-Frankia*
  - d. *Nitrobacter-Nitrosomonas*
13. Which of the following air borne microbe is responsible for causing organic dust toxic syndrome (ODTs)?
  - a. *Enterococcus haemoperoxidus*
  - b. *Thermoactinomyces vulgaris*
  - c. *Klebsiellapneumoniae* strains
  - d. *Escherichia coli* strains
14. The site of biological nitrogen fixation in plants is:
  - a. Nitrogen fixing microorganisms
  - b. Root nodules
  - c. Root cortex
  - d. Rhizosphere
15. Which of the following structure is a characteristic of ectomycorrhizal fungi?
  - a. Presence of hartig net
  - b. Formation of arbuscules
  - c. Vesicles
  - d. a & b
16. The chief fungal fermenting microorganism is:
  - a. *Lactobacillus helveticus*
  - b. *Saccharomyces cerevisiae*
  - c. *Leuconostocaurius*
  - d. All of the above
17. The principle for preparation of cheese involves which group of microorganism?
  - a. Yeast
  - b. Lactose fermenting bacteria
  - c. Lactic acid producing bacteria
  - d. None of the above
18. Botulism food poisoning is caused by:
  - a. *Clostridium botulinum*
  - b. *Salmonella strains*
  - c. *Staphylococcus aureus*
  - d. *Vibrio parahaemolyticus*
19. Skimmed milk is prepared from:
  - a. Milk by removing the fat content
  - b. Milk by removing the non-fats
  - c. Milk by removing the water content
  - d. All of the above
20. The branch of food microbiology that deals with the study of fermentation is called:
  - a. Seccharology
  - b. Fermentation Microbiology
  - c. Fermentation Technology
  - d. Zymology

**( Descriptive )**

Time : 2 hr. 30 mins.

Marks : 50

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

1. What is rhizosphere? Write short note on the role of rhizosphere 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. 2+8=10
3. What is transformation? Describe in detail the steps involved during transformation with suitable diagram. 2+5=10
4. Write notes on: 5×2=10
  - a) Physical control of microorganisms
  - b) Chemical control of microorganisms
5. Write in brief the Germ theory of diseases and Koch postulates. 10
6. Write short notes on: 5×2=10
  - a) Organic matter decomposition
  - b) Arbuscular mycorrhizal fungi
7. Write short notes on: 5×2=10
  - a) Microbial food spoilage
  - b) Food poisoning
8. What is milk? What are the sources of microorganisms in milk? Write short note on different milk products. 2+3+5=10

= = \*\*\* = =