

**B.M.S COLLEGE FOR WOMEN  
BENGALURU – 560004**

**III SEMESTER END EXAMINATION –JAN/FEB-2024**

**B. Sc – MICROBIOLOGY**

**MICROBIAL DIVERSITY**

**Course Code: MB3 DSC03**

**QP Code: 3020**

**Duration: 2 ½ Hours**

**Max marks: 60**

**Instructions: 1. Answer all the sections.  
2. Draw diagrams wherever necessary.**

**SECTION-A**

**I. Answer all the following.**

**(5x2=10)**

1. Explain sporangium with example.
2. Explain the thermophilic organisms with examples.
3. Mention the significance of Ainsworth classification
4. Summarize cyanophages
5. Name the causative agent of 'Rocky Mountain spotted fever' and mention the vector.

**SECTION-B**

**II. Answer any FOUR of the following.**

**(4x5=20)**

6. Explain the adaptation mechanism in psychrophiles. Give an example.
7. List out the general characters of *Mycoplasma pneumoniae*
8. Compare the differences between prions and viroids
9. Brief about economic importance of *Aspergillus* sp
10. Explain the pathology, symptom diagnosis and treatment of Covid virus
11. Describe in detail about Lichens with example.

### SECTION-C

#### III. Answer any TWO of the following.

(2x10=30)

12. Explain the significance and conservation of microbial diversity.
13. How would you compile the facts for cultivation of viruses.
14. Write in detail about Saccharomyces its general characteristics, haplobiontic reproduction, and significance
15. Discuss the general characteristics of Actinomycetes and their importance.

### SECTION D

#### IV. Answer all Multiple Choice Questions (MCQs)

(10x1=10)

16. An icosahedral capsid consists of...
  - a. Hexagonal Capsomeres
  - b. Pentagonal Capsomeres
  - c. Triangular Capsomeres
  - d. Both a and b
17. Viral genome inserted to the bacterial genome is termed as
  - a. Lysogeny
  - b. Prophage
  - c. Lytic cycle
  - d. Virulent phage
18. What is the primary advantage of using organ culture for virus cultivation?
  - a. It allows for the large amount of production of virus
  - b. It doesn't require specialised equipment
  - c. The culture can be easily monitored
  - d. It allows for the study of virus replication in a more natural environment
19. The type of extremophile that lives in environments such as the Great salt lake
  - a. Halophil
  - b. Thermophile

- c. Xerophile
- d. radiophile

20. Conservation within the natural habitat is

- a. in situ conservation
- b. ex situ conservation
- c. in vivo conservation
- d. ex vivo conservation

21. Archaea and Bacteria are most similar in terms of their \_\_\_\_\_.

- a. genetics
- b. cell wall structure
- c. ecology
- d. unicellular structure

22. Chlamydospores are found in \_\_\_\_\_

- a. Aspergillus
- b. Agaricus
- c. Fusarium
- d. All the above

23. \_\_\_\_\_ is used as an insulator

- a. Chlorella
- b. Gracillaria
- c. Diatoms
- d. All the above

24. Connective between the fungal spores in the conidial is called \_\_\_\_\_

- a. Peptide bond
- b. Hyphae
- c. Stolon
- d. Isthmus

25. Nocardia cell walls contain which amino acid as a component of their peptidoglycan?

- a. Lysine
- b. Glycine

c. Alanine

d. Meso-diaminopimelic acid (DAP)

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