

**STELLA MARIS COLLEGE (AUTONOMOUS) CHENNAI 600 086**  
**(For candidates admitted during the academic year 2019 – 2020 & thereafter)**

**B. Sc. DEGREE EXAMINATION, NOVEMBER 2024**  
**BRANCH V (a) – PLANT BIOLOGY AND PLANT BIOTECHNOLOGY**  
**FIFTH SEMESTER**

**COURSE : MAJOR – CORE**  
**PAPER : MICROBIOLOGY**  
**SUBJECT CODE : 19BT/MC/MB54**  
**TIME : 3 HOURS**

**MAX.MARKS:100**

**SECTION – A**

**ANSWER ALL QUESTIONS**

**(18x1=18 Marks)**

**I. CHOOSE THE CORRECT ANSWER**

**(5x1=5 Marks)**

1. Germ theory of disease was postulated by \_\_\_\_\_.  
a) Edward Jenner    b) Louis Pasteur    c) Robert Koch    d) Carl Woese
2. The infoldings in the plasma membrane of bacterial cells are called as \_\_\_\_\_.  
a) Mesosomes    b) Lomasomes    c) Chromatosomes    d) Microsomes
3. The protein coat of viruses that enclose the genetic material is called \_\_\_\_\_.  
a) Virion    b) Capsomer    c) Envelope    d) Capsid
4. Which of the biochemical cycle is without an atmospheric component?  
a) Carbon    b) Nitrogen    c) Phosphorous    d) Oxygen
5. Activated sludge process is an example of \_\_\_\_\_ growth process.  
a) Anaerobic suspended    b) Aerobic suspended  
c) Aerobic attached    d) Anaerobic attached

**II. FILL IN THE BLANKS**

**(5x1=5 Marks)**

6. An enzyme used by Retrovirus to convert its RNA to DNA is called \_\_\_\_\_.
7. The chemical reaction that converts organic nitrogen into ammonia is \_\_\_\_\_.
8. BOD stands for \_\_\_\_\_.
9. The hair-like appendages found on the bacterial surface that helps in attachment is \_\_\_\_\_.
10. The food borne disease that causes Botulism is \_\_\_\_\_.

**III. TRUE OR FALSE:**

**(3x1=3 Marks)**

11. Conjugation is a key mechanism for horizontal gene transfer (HGT) -
12. *Streptomyces* helps in composting by maintaining biotic equilibrium –
13. The cell wall of gram-negative bacteria is made of lipopolysaccharide layer -

**IV. MATCH THE FOLLOWING****(5x1=5 Marks)**

- 14. Natural preservative - RNA
- 15. Chemical preservative - Nitrogen fixation
- 16. TMV - coliform bacteria
- 17. *E. coli* - Sorbate
- 18. *Pseudomonas* - Sugar

**V. ANSWER ANY SIX QUESTIONS,  
(Each answer not exceeding 50 words)****(6x3=18 Marks)**

- 19. Endospore
- 20. Root gall disease
- 21. Herpes simplex virus
- 22. Three domain system
- 23. BCG
- 24. Plaque assay
- 25. Halogens
- 26. Types of media
- 27. Storage granules

**SECTION - B****ANSWER ANY FOUR QUESTIONS EACH ANSWER SHOULD NOT EXCEED  
200 WORDS. DRAW DIAGRAMS WHEREVER NECESSARY****(4x6=24 Marks)**

- 28. Describe the phases involved in bacterial growth curve.
- 29. Mention the causal organism, symptoms and control measures of little leaf of Brinjal.
- 30. Interpret the importance of VAM in forestry and agriculture.
- 31. Distinguish Viroids from Prions.
- 32. Outline the Whittaker's five kingdom system of classification.
- 33. Enumerate the steps involved in small scale sewage treatment.

**SECTION - C****ANSWER ANY TWO QUESTIONS EACH ANSWER SHOULD NOT EXCEED  
1000 WORDS. DRAW DIAGRAMS WHEREVER NECESSARY (2x20=40 Marks)**

- 34. Give a detailed overview on Biogeochemical cycle.
- 35. Elucidate the mechanism of Genetic recombination in bacteria.
- 36. Discuss the the replication of any one plant and an animal viruses.
- 37. Explain the process involved in purification of drinking water.

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