

STELLA MARIS COLLEGE (AUTONOMOUS) CHENNAI 600 086
(For candidates admitted during the academic year 2004-05 & thereafter)

SUBJECT CODE: BT/MC/GM54

B. Sc. DEGREE EXAMINATION, NOVEMBER 2007
BRANCH V (a) – PLANT BIOLOGY AND PLANT BIOTECHNOLOGY
FIFTH SEMESTER

COURSE : MAJOR – CORE
PAPER : GENERAL MICROBIOLOGY
TIME : 3 HOURS
MAX. MARKS : 100

SECTION – A

ANSWER ALL QUESTIONS (18 marks)

I CHOOSE THE CORRECT ANSWER:

1. The term immunization relates to
a. antibiotics b. drugs c. vaccines d. Therapeutics
2. The bacteria involved in root nodulation is
a. *Bacillus* b. *Rhizobium* c. *Azolla* d. *Pneumococcus*
3. TMV consists of single molecules of
a. ssRNA b. dsRNA c. ssDNA d. dsDNA
4. Little leaf of brinjal is incited by
a. bacteria b. fungi c. virus d. mycoplasma
5. The normal size of the floc's in the activated sludge process ranges from
a. 5-20 μ m b. 10-50 μ m c. 50-200 μ m d. 100-150 μ m

II. Fill in the blanks:

6. Bacterial viruses are otherwise called as
7. Phages transducing only those bacterial genes adjacent to the prophage in the bacterial chromosome is called
8. The space between the inner and outer membrane in bacteria is known as
9. The process of conversion of ammonia into nitrate is called
10. is a process where dewatered sludge undergoes decomposition within the thermophilic temperature range.

III. State whether true or false:

11. Mesosomes are infoldings of the plasma membranes.
12. Plasmids are extra chromosomal genetic materials.
13. PDA medium is used for the cultivation of bacteria.
14. Primary treatment of wastewater attempts to remove coarse solid and settleable solids.

IV. Match the following:

- | | | | |
|-----|--------------------|---|-------------------|
| 15. | <i>Iwanowsky</i> | - | Nitrogen fixation |
| 16. | <i>Azotobacter</i> | - | Disinfectant |
| 17. | Pasteurization | - | Virus |
| 18. | Chlorine | - | Sterilization |

V. Answer any six of the following in 50 words each.

19. Write about five-kingdom concept.
20. Distinguish between fission and budding.
21. Define nitrification. Mention one microbe involved in nitrification.
22. What are trickling filters?
23. Expand : a. NA b. PDA c. HEPA
24. Mention any three chemicals that inhibit the growth of microbes.
25. Define sterilization.
26. What is conjugation?
27. Distinguish between lytic and lysogenic cycle.

SECTION – B

Answer any four questions. Each answer not to exceed 200 words: (4x6=24)

28. Briefly explain Koch's postulates.
29. Draw a diagram of T4 phage and TYMV.
30. Distinguish between batch culture and continuous culture.
31. Mention the pathogen, symptom and control measures of citrus canker.
32. Classify bacteria based on shape and flagella.
33. Write about the normal growth curve of bacteria.

SECTION – C

Answer any two questions. Each answer not to exceed 1000 words: (2x20=40)

34. Explain Transduction.
35. With illustrations, explain nitrogen and carbon cycle.
36. What are pure cultures? Describe the methods to isolate pure culture.
37. Explain the processes involved in wastewater treatment.
