

STELLA MARIS COLLEGE (AUTONOMOUS) CHENNAI 600 086
(For candidates admitted during the academic year 2011- 12)
SUBJECT CODE: 11BT/MC/MB54
B. Sc. DEGREE EXAMINATION, NOVEMBER 2013
BRANCH V (a) – PLANT BIOLOGY AND PLANT BIOTECHNOLOGY
FIFTH SEMESTER

COURSE : MAJOR – CORE
PAPER : MICROBIOLOGY
TIME : 3 HOURS

MAX.MARKS:100

SECTION – A

ANSWER ALL QUESTIONS

(18 Marks)

Fill in the blanks:

I. Fill in the blanks:

(5x1=5)

1. Bacteria secrete on their surface, a substance, called_____.
2. Proteinaceous infective particles are called_____.
3. In protozoans, *Trichonympha* exhibit locomotion by _____.
4. *Arthrotrhyis* is a, _____ fungus.
5. _____ medium, is used to isolates fecal coliforms in drinking water.

II. Match the following

(5x1=5)

- | | | |
|-------------------------------|---|------------------|
| 6. F- Factor | - | insecticide |
| 7. Nuclear Polyhedrosis Virus | - | Retro Virus |
| 8. Bioaerosols | - | Vaccine |
| 9. <i>Bordetella pertussi</i> | - | Conjugation |
| 10. Reverse transcription | - | Gravity Sampling |

III. True or False

(4x1=4)

11. Pencillins and cephalosporins are the bacterial cell wall inhibitors.
12. Virusoids are small circular DNAs which are similar to viroids.
13. Microorganisms surrounding the root region are called Rhizoplane.
14. Yeast are obligate anaerobes

IV. Choose the correct one

(4x1=4)

15. In Bergey's Manual, Gram +ve rods/ cocci bacteria are grouped under,
i) Section 12 ii) Section 12 & 13 iii) Section 13 iv) Section 14
16. Primary cell lines (diploid cell lines) are required
i) to cultivate human pathogenic bacteria ii) to cultivate animal cells
iii) to cultivate animal viruses iv) to cultivate mice embryo
17. To detect fecal contamination in water
i) *Salmonella* is used as indicator organism ii) *Salmonella* and *shigella* are used as indicator
iii) *Escherichia coli* is used as indicator organism
iv) *Enterobacter* and *klebriella* are used as indicator organisms.
18. The actinomycete, Frankia is a
i) Symbiotic nitrogen fixer in legumes, ii) Symbiotic Nitrogen fixer in non-legumes
iii) Inducer of stem- nodulation in non-legumes iv) Producer of Geosmins, earthy odour in soil.

V. Answer any six questions each answer not exceeding 50 words (6x3=18)

19. Koch's postulates
20. Exponential phase in microbial growth curve
21. Gram's Staining
22. Archaea
23. Stem – nodulation
24. Viroids
25. Rhizosphere
26. Arbuscular Mycorrhiza
27. Liquid impingement

SECTION B

**ANSWER ANY FOUR QUESTIONS EACH ANSWER NOT EXCEEDING 200 WORDS.
(4x6=24)**

28. Write in detail, Whittaker's five kingdom theory.
29. Draw and describe bacterial endospore formation.
30. Draw and describe the structure of Tobacco Mosaic Virus (TMV).
31. Discuss in detail, the Nitrogen Cycle.
32. Explain the role of bacteria in biocontrol of insects.
33. What are the chemicals used to control the growth of microorganisms? Describe.

SECTION C

**ANSWER ANY TWO QUESTIONS EACH ANSWER NOT EXCEEDING 1000 WORDS
(2x20=40)**

34. Write an essay on cultivation, purification & assay of Viruses.
35. Write in detail Bacterial Conjugation Types.
36. Draw and describe Lytic and Lysogenic cycles in viral replication.
37. With a flow chart, describe in detail, the sewage disposal and treatment.
