

LOYOLA COLLEGE (AUTONOMOUS), CHENNAI – 600 034

B.Sc. DEGREE EXAMINATION – PLANT BIOLOGY AND PLANT BIOTECHNOLOGY

FOURTH SEMESTER – NOVEMBER 2015

PB 4508/PB 4504 - MICROBIOLOGY

Date : 04/09/2015
Time : 01:00-04:00

Dept. No.

Max. : 100 Marks

PART – A (20 marks)

Answer **ALL** questions:

I. Choose the correct answer: (5 x 1 = 5)

1. Bacterial culture can be maintained for longer period through the process of
a) Lyophilisation b) Drying c) Refrigeration d) Moist heat
2. Rabies vaccine was first prepared from
a) Rabbit b) Dog c) Chicken d) Mouse
3. When a tuft of flagella are located on one polar end of the bacterial cell it is called
a) Atrichous b) Amphitrichous c) Lophotrichous d) Monotrichous
4. Viruses with 20 sided head is called
a) Helical b) Binal c) Icosahedral d) Complex
5. One of the following is a phosphate solubilising bacterium
a) Bacillus b) Clostridium c) Beijerinckia d) Chlorobium

II. State the following statements are True or False: (5 x 1 = 5)

6. The infolding of plasma membrane in bacteria is called pili.
7. Rhodospirillum is an autotrophic phototroph.
8. Sauerkraut is a fermented product.
9. Bacterium which convert Nitrate to Nitrite is called Nitrobacter.
10. In complete virus particles are called viroids.

III. Complete the following: (5 x 1 = 5)

11. Lactobacillus bacterium is predominantly found in _____.
12. Bacteria which require minute quantity of oxygen are called _____.
13. Extra chromosomal DNA found in bacteria is called _____.
14. Expand MTCC _____.
15. _____ bacteria are used as biological indicators in routine water analysis.

IV. Answer ALL, each within 50 words:

(5 x 1 = 5)

16. What is a Pure culture.

17. Expand BOD.

18. What are Sarcina ecocci?

19. What are Temperate phages?

20. What is an Oxidation pond?

PART – B

Answer the following, each within 500 words: Draw diagrams wherever necessary

(5 x 7 = 35)

21. a) List any seven characteristics of Prokaryotes.

(OR)

b) Write a brief note on the Gram's staining procedure and explain why Gram negative and Gram positive bacteria react differently.

22. a) Classify bacteria based on nutritional types. Add a note on temperature types.

(OR)

b) What are the various culture media used in bacterial growth.

23. a) Write notes of interest on fermentation.

(OR)

b) Explain Griffith's experiment and add a note on its significance.

24. a) Give brief account on lytic cycle.

(OR)

b) How can you cultivate viruses in the laboratory? Add a note on their general characteristics.

25. a) Explain phosphorous cycle with the help of a schematic representation.

(OR)

b) Write notes on: i) Symbiotic nitrogen fixation (ii) Asymbiotic nitrogen fixation.

PART – C

Answer any **THREE** of the following each within 1200 words;

Draw diagram wherever necessary.

(3 x 15 = 45)

26. Give a detailed account on the growth curve of bacteria, add a note on the various methods of enumerating the population.

27. Give a detailed account on structure and classification of bacteriophages.

28. Explain the process of conjugation in bacteria.

29. Explain in detail the sewage treatment process.

30. Explain briefly the various microbial flora involved in food spoilage, add a note on its preservation.

\$\$\$\$\$\$