



LOYOLA COLLEGE (AUTONOMOUS), CHENNAI – 600 034

M.Sc. DEGREE EXAMINATION – BIOTECHNOLOGY

FIRST SEMESTER – NOVEMBER 2015

BT 1827 - MICROBIOLOGY

Date : 07/11/2015

Dept. No.

Max. : 100 Marks

Time : 01:00-04:00

PART – A

(20 Marks)

Answer ALL the Questions

I. Choose the correct answer

(5 x 1 = 5)

1. The five-kingdom system of classification was set up by
a) Louis Pasteur b) Robert Whittaker c) Edward Jenner d) Robert Koch
2. All membranes of free-living organisms have phospholipid bilayers, with the exception of
a) Bacteria b) Fungi c) Archaeobacteria d) Algae
3. Which of the following nucleoside diphosphates is used most often in carbohydrate anabolism?
a) Uridine b) Thymosine c) Guanosine d) Adenosine
4. The transducing particles carry only specific portions of the bacterial genome in
a) Generalised transduction b) Specialised transduction
c) Abortive transduction d) Induced transduction
5. Reverse transcriptase is required when
a) RNA virus converts its RNA to DNA b) there are no host cells present
c) nutrients are scarce d) spikes are forming in the new virus

II. State whether the following are true or false, if false, give reason

(5 x 1 = 5)

6. Mycoplasma differs from other prokaryotes by the absence of cell wall.
7. Glyoxylate pathway is the sole source of carbon for some microorganisms.
8. F factor plasmids play a major role in transcription.
9. Viruses largely lack metabolic machinery of their own to synthesize proteins.
10. Hyperplasia is the uncontrolled proliferation of cells.

III. Complete the following

(5 x 1 = 5)

11. Selective toxicity was proposed by _____
12. Anoxygenic photosynthetic bacteria oxidize _____
13. The genes required for integration into host chromosomes are carried by _____.
14. The transcription of the viral nucleic acid into mRNA is not necessary in case of _____.
15. Area of lysis on a bacterial lawn culture produced by a phage is known as _____.

IV. Answer the following, each within 50 words

(5 x 1 = 5)

16. Mention the modifications in a phase contrast microscope and its purpose.
17. What is oxidative phosphorylation?
18. Define shuttle vector.
19. List three differences between Hepatitis delta-agent and other viroids.
20. Draw and label the parts of a bacteriophage.

PART B

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

(5 x 8 = 40 marks)

21. (a) Discuss briefly the structure and formation of endospores.

OR

(b) Differentiate prokaryotic cell from a eukaryotic cell.

22. (a) Give a brief account of cyclic and non cyclic photophosphorylation.

OR

(b) What is culture media? Classify the different types based on consistency and properties.

23. (a) Write a short note on the production of Vitamin B12

OR

(b) Briefly describe the methods to detect bacterial transformants.

24. (a) Write briefly on the different types of ELISA.

OR

(b) Discuss cultivation of viruses in embryonated eggs.

25. (a) Describe the life cycle of H1N1 virus.

OR

(b) Write a short note on Nuclear polyhedrosis virus.

PART – C

**Answer any TWO of the following, each within 1500 words.
Draw diagrams wherever necessary.**

(2 x 20 = 40 Marks)

26. Give a detailed account of sterilisation by chemical agents and radiation.

27. Explain the different methods to enumerate the bacterial concentration.

28. Write in detail on Bacterial Conjugation.

29. Classify Hepatitis virus. Explain in detail its pathogenesis and prophylaxis.
