

LOYOLA COLLEGE (AUTONOMOUS), CHENNAI – 600 034

B.Sc. DEGREE EXAMINATION – CHEMISTRY & ADV. ZOO.

AE3

THIRD SEMESTER – NOVEMBER 2007

PB 3200 - GENERAL MICROBIOLOGY

Date : 05/11/2007
Time : 9:00 - 12:00

Dept. No.

Max. : 100 Marks

PART A

Answer all the questions

(20 Marks)

I. Choose the best answer

(5 x 1 = 5)

1. The viruses infecting blue green algae are called
(a) Bacteriophages (b) Phytophages (c) Cyanophages (d) Mycophages.
2. Chemotrophs derive nutrients from
(a) sunlight (b) organic substances (c) inorganic substances (d) all of the above.
3. Operon concept explains _____ of enzymes.
(a) repression (b) induction (c) regulation (d) inhibition.
4. Mycoplasma causes
(a) Little leaf of brinjal (b) Rust of wheat
(c) Citrus canker (d) Mosaic disease.
5. Microbe mediated solubilization of insoluble ores is called _____.
(a) biomagnification (b) biodegradation (c) bioleaching (d) biosorption.

II. State True or False

(5 x 1 = 5)

6. Viruses are considered as prokaryotes because they exhibit prokaryotic characteristics.
7. Bacterial ribosomes belong to 80s type.
8. Sex pili seldom involve in bacterial conjugation.
9. Dikaryotization in *Puccinia graminis* takes place during pycnidial stage.
10. Vaccines are used to prevent diseases.

III. Complete the following

(5 x 1 = 5)

11. Algae growing at the bottom of the water reservoirs are called _____.
12. The temperature for the liquid nitrogen storage is _____.
13. Extra-chromosomal DNA in bacteria is called _____.
14. The genetic material in TMV is _____.
15. Enrichment of water bodies with nitrates and phosphates leads to _____.

IV. Answer the following questions each in about 50 words

(5 x 1 = 5)

16. Distinguish between fission and budding.
17. What are endospores?

18. Mention the function of RNA polymerase.
19. Distinguish between Uredospores and Teliospores.
20. List any four organisms involved in food spoilage.

PART B

V. Answer any five of the following each in about 350 words. Draw necessary diagrams. (5 x 8 = 40)

21. Distinguish between Prokaryotes and Eukaryotes.
22. Classify bacteria based on shape and flagellation.
23. Describe the various methods of culture preservation.
24. Explain how the number of bacteria in a population can be measured.
25. Describe in brief the methods of food preservation.
26. Explain the fermentation process of penicillin.
27. Write notes on generalized transduction.
28. Write about the pathogen, symptoms and control measures of citrus canker.

PART C

VI. Answer the following questions each in about 1500 words. Draw necessary Diagrams (2 x 20 = 40)

29. (a) Give a general account on the structure and reproduction in Fungi.
(OR)
(b) What are pure cultures? Describe the methods used to isolate pure cultures.
30. (a) Explain the following:
 - (i) Gene regulation in *E. coli*.
 - (ii) DNA replication.(OR)
(b) Write detailed notes on the following.
 - (i) Nitrogen cycle.
 - (ii) Carbon cycle.
