

LOYOLA COLLEGE (AUTONOMOUS), CHENNAI – 600 034

B.Sc. DEGREE EXAMINATION – ADV.ZOOL.&BIOTECH.& CHEMISTRY

THIRD SEMESTER – APRIL 2010

PB 3206 / 3200 - GENERAL MICROBIOLOGY

Date & Time: 30/04/2010 / 1:00 - 4:00

Dept. No.

Max. : 100 Marks

PART A (20 marks)

Answer all questions

I. Choose the correct answer

(5 x 1 = 5)

01. Sexual reproduction is absent in
a) Basidiomycetes b) Ascomycetes c) Deuteromycetes d) Myxomycetes
02. The substance peptidoglycan is found in the:
a) ribosomes of prokaryotes b) cell wall of bacteria
c) chromosomes of eukaryotes d) cell membrane of bacteria
03. Site of DNA where RNA polymerase binds to initiate transcription is called
a) terminator b) operator c) open reading frame d) promoter
04. Mycoplasmas are different from other prokaryotes by the:
a) presence of chitin in the cell wall b) presence of murein in the cell wall
c) presence of protein in the cell wall d) absence of cell wall itself
05. Clarification of fruit juices is done using
a) Protease b) pectinase c) collagenase d) amylase

II. State whether the following statements are true or false

(5 x 1 = 5)

06. Plant viruses contain RNA as genetic material.
07. Members of the genera *Bacillus* and *Clostridium* are known for their ability to produce endospores.
08. Okazaki fragments are used to elongate the lagging strand.
09. *Puccinia* requires one host to complete its life cycle.
10. MPN method is used to preserve food from contamination.

III. Complete the following

(5 x 1 = 5)

11. The protein subunits of a virus particle are called _____.
12. The group of organisms which uses light as the energy source and CO₂ as the principal carbon source is called_____.
13. The _____ is the site of enzymes that participate in the respiration of prokaryotic cells.
14. Little leaf of brinjal is caused by _____.
15. Pasteurization by HTST is done at _____°C.

IV. Answer the following each in about 50 words

(5 x 1= 5)

16. Define heterokont.
17. Distinguish between amphitrichous and peritrichous bacteria.
18. What is transformation?
19. What is chlorosis?
20. Name any two microbial enzymes and their uses.

PART B

Answer the following, each answer not exceeding 350 words. Draw diagrams and flow charts wherever necessary.

(5 x 7= 35)

21. a. Mention the salient features of viruses.
(or)
b. List out the characteristic features of algae.
22. a. Give an account of quantitative measurement of bacterial growth.
(or)
b. Describe the structure and development of endospore.
23. a. What is operon ? Describe the process of gene regulation in *E. coli*.
(or)
b. Give an account of transduction.
24. a. Write notes on the symptoms and control measures of citrus canker.
(or)
b. Briefly explain the causative organism, symptoms and control of tobacco mosaic disease.
25. a. Give an account of nitrogen cycle.
(or)
b. Write notes on activated sludge process and oxidation ponds.

PART C

Answer any three of the following, each answer not exceeding 1200 words. Draw diagrams and flow charts wherever necessary.

(3 x 15= 45)

26. Give an account of the salient features, classification and uses of Fungi.
27. Briefly describe the ultramicroscopic structure of a bacterial cell.
28. Write an essay on the replication of DNA in *E. coli*.
29. Explain in detail about the symptoms, disease cycle and control of black rust disease in wheat.
30. What are fermented foods? Explain the process of cheese production.
