



**LOYOLA COLLEGE (AUTONOMOUS), CHENNAI – 600 034**

**M.Sc. DEGREE EXAMINATION – BIOTECHNOLOGY**

FIRST SEMESTER – NOVEMBER 2016

**16PBT1MC03 - MICROBIOLOGY**

Date: 07-11-2016  
Time: 01:00-04:00

Dept. No.

Max. : 100 Marks

**PART – A**

**Answer ALL the Questions**

**I. Choose the correct answer**

**(5 x 1 = 5 Marks)**

1. Mycoplasmas are different from the other prokaryotes by
  - a) presence of chitin in cell walls
  - b) presence of murrain in cell walls
  - c) presence of proteins in cell walls
  - d) absence of cell wall
2. Anoxygenic photosynthesis is carried out by
  - a) Photosynthetic bacteria
  - b) algae
  - c) fungi
  - d) all the above
3. The enzyme, which hydrolyses the murein is
  - a) peroxidase
  - b) tannase
  - c) lysozyme
  - d) urease
4. Viropexis is a process of
  - a) release of virus
  - b) budding of virus
  - c) engulfing the virus
  - d) distribution of virus
5. Tinea nigra is the infection of the
  - a) nail
  - b) hair
  - c) skin
  - d) blood

**II. State whether the following are true or false**

**(5 x 1 = 5 Marks)**

6. The three domain version of life on earth is based on the nucleic acid sequence data.
7. The Refractive Index of oil is higher than that of air.
8. The selective media for *N.gonorrhoea* is Thayer Martin medium.
9. Pock assay is a quantitative Assay.
10. Arthrospores are unicellular vegetative spores.

**III. Complete the following**

**(5 x 1 = 5 Marks)**

11. Concept of aseptic technique was developed by \_\_\_\_\_.
12. Membrane invaginations into the bacterial cytoplasm are known as \_\_\_\_\_.
13. \_\_\_\_\_ is the standard test to detect *T.pallidum*.
14. The protein free, virus like agents is called \_\_\_\_\_.
15. The major polysaccharide in fungal cell wall is \_\_\_\_\_.

**IV. Answer the following, each within 50 words**

**(5 x 1 = 5 Marks)**

16. Mention the source of energy in lithotrophs.
17. What is oxidative phosphorylation?
18. Differentiate Meningococci from Gonococci.
19. What are viroids?
20. What is Aspergilloma?

**PART – B**

**(5 × 8 = 40 Marks)**

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

21. (a) Write briefly on Denaturing Gradient Gel Electrophoresis and Temperature Gradient Gel Electrophoresis.

**OR**

- (b) Discuss the characteristics of the three major groups of Archaeobacteria.

22. (a) Write short notes on a) Endospores b) Magnetosomes

**OR**

- (b) Give the structure and function of Dark field microscope.

23. (a) Describe the pathogenesis of tuberculosis.

**OR**

- (b) Write briefly the classification and pathogenesis of *Salmonella typhi*.

24. (a) Discuss the structure, pathogenesis and treatment of Hepatitis b Virus

**OR**

- (b) Write briefly on the pathogenesis and clinical findings of rabies virus.

25. (a) Classify fungi based on morphology and infection.

**OR**

- (b) Write briefly on Aspergillosis.

**PART – C**

**(2 × 20 = 40 Marks)**

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

26. Explain in detail the molecular methods used in Classification of microorganisms.

27. Write in detail on the different methods used for counting the number of microbes.

28. Classify Streptococci. Describe the virulence factors of *Streptococcus pyogenes* along with the pathogenesis and laboratory diagnosis.

29. Explain the structure, antigenic variation, and pathogenesis and laboratory diagnosis of HIV.

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