LOYOLA COLLEGE (AUTONOMOUS), CHENNAI – 600 034

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

FIRST SEMESTER – **NOVEMBER 2018**

16/17/17PBT1MC03 – MICROBIOLOGY

Date: 30-10-2018 Dept. No. Max. : 100 Marks

Time: 01:00-04:00

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 itself
2. Some organisms can use reduced inorganic compounds as electron donors and are termed
   a) phototrophs b) chemotrophs c) lithotrophs d) photoorganotrophs
3. Protein A is found in the cell wall of
   a) Coagulase negative *staphylococci* b) *Staphylococcus aureus*
   c) *Micrococci* d) *Pneumococci*
4. The transcription of the viral nucleic acid into mRNA is not necessary in case of
   a) RNA viruses b) ds DNA viruses
   c) ss DNA viruses d) Circular DNA
5. Which among the following are asexual spores?
   a) Blastospores b) Ascospores c) Basidiospores d) zygospores

II. State whether the following are true or false. (5x1=5 Marks)

6. Robert Hook contributed to cell theory.
7. Phosphate repression cannot be eliminated by optimization of nutrient medium.
8. S.*pneumoniae* are alpha-haemolytic.
9. WI -38 is a secondary cell line.
10. Fungi differ from the other eukaryotic microbes in having ergosterol.

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

11. As the electron flow through the chains, much of their free energy is conserved in the form of ATP. This process is called_____.
12. The cell walls of gram positive bacteria can be easily destroyed by the enzyme _____.
13. If division of cell takes place in three planes it will produce _____.
14. When a virus enters a cell and does not replicate immediately, the situation is _____ .
15. _____ exhibit yeast-like growth at human body temperatures and mold-like growth at room temperature.

IV. Answer the following within 50 words (5 x 1 = 5 Marks)

16. Mention the modifications in a phase contrast microscope and its purpose
17. What is oxidative phosphorylation?
18. Define prions.
19. What is a prophage?
20. What is cutaneous mycoses?

PART B

Answer the following each within 500 words. **(5 x 8 = 40 marks)**
Draw diagrams wherever necessary

21. (a) Write briefly on germ theory of disease

OR

(b) Write a short note on Whittaker's five kingdom concept.

22. (a) What is the principle of fluorescent microscope? Explain

OR

(b) Comment on the nutritional types of bacteria.

23. (a) Outline the pathogenesis of *Neisseria gonorrhoeae*

OR

(b) Write a short note on the virulence factors of *Staphylococcus aureus*.

24. (a) Give a brief account about the cultivation of viruses in embryonated egg.

OR

(b) Discuss the causative agent and pathogenesis of rabies.

25. (a) Write briefly on candidiasis.

OR

(b) Give a brief account of *Tinea nigra.*

PART – C

Answer any TWO of the following, each within 1500 words. **(2 x 20 = 40 Marks)**
Draw diagrams wherever necessary.

26. Explain in detail the structure and function of electron microscope.

27. Describe the suppurative and non suppurative conditions caused by *Streptococcus pyogenes*

28. Illustrate the lytic cycle of bacteriophages.

29.Elaborate on the lifecycle of *Plasmodium vivax* and its clinical presentation

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