LOYOLA COLLEGE (AUTONOMOUS), CHENNAI – 600 034

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

FIRST SEMESTER – NOVEMBER 2017

17PBT1MC03 - MICROBIOLOGY

Date: 08-11-2017 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. Ribosomal RNA sequences in RDB project alignment are drawn from
   a) Xenbase b) chEMBL c) IntAct d) GenBank
2. Bacteria which have single flagellum on opposite ends are called
   a) Amphibious b) Lophotrichous c) Amphitrichous d) Anamorphic
3. The coagulase test is used to differentiate
   a) *Staphylococcus epidermidis* from *Neisseria meningitidis*
   b) *Staphylococcus aureus* from *Staphylococcus epidermidis*
   c) *Streptococcus pyogens* from *Staphylococcus aureus*
   d) *Streptococcus pyogens* from *Enterococcus faecalis*
4. Epidemic kerato conjunctivitis is also called as
   a) swimming pool conjunctivitis b) keratitis
   c) Acute conjuctivitis d) ship yard eye
5. Sexual spores are formed by
   a) Mitotic division b) Meiotic division c) binary fission d) reproduction

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

6. SSCP stands for single strand cell protein.
7. Manganese is one of the major macronutrient required for bacterial growth.
8. *Staphylococcus aureus* is the most virulent species of *Staphylococcus*.
9. Rotavirus is associated with respiratory infection.
10. Tinea nigra is a nail infection.

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

11. Phycology is the study of_____.
12. _____ acid is found in cell wall of gram positive bacteria.
13. Enterovirus type 72 is reclassified as _____.
14. The TMV virus after its multiplication enters the neighboring cells through_____.
15. Unicellular vegetative spores formed due to septation and fragmentation is called ____.

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

16. Mention the work of Beadle and Tatum.
17. What are pili?
18. Mention at least 3 major virulence factors of *Neisseria gonorrhoeae.*
19. What are viroids?
20. Define Aspergilloma.

PART B

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

21. (a) Mention the salient features of methanogenic and halophilic archaea.

OR

(b) Write a note on Haeckel's three kingdom concept.

22. (a) How does light and temperature play a role in the growth of microorganisms?

OR

(b) Give a note on compound microscopy technique by adding a note one its principle and applications.

23. (a) Write briefly on the virulence factors of *Staphylococcus aureus*.

OR

(b) Describe the pathogenesis and laboratory diagnosis of pneumococal pneumonia

24. (a) Describe the pathogenesis, laboratory diagnosis, and prophylaxis of rabies

OR

(b) Write a short note on the structure and pathogenesis of Pox virus.

25. (a) Describe the pathogenesis and laboratory diagnosis of candidiasis

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(b) Give a brief account of *Trichophyton*.

PART – C

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

26. Describe the molecular classification of microbes based on DGGE method.

27. Give an account on the principle, theory and applications of phase contrast and fluorescence microscopy.

28. Describe the pathogenesis, laboratory diagnosis, and treatment of syphilis.

29. Explain the life cycle of *Plasmodium falciparum* and its clinical presentation.

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