RAMAKRISHNA MISSION VIDYAMANDIRA

(Residential Autonomous College affiliated to University of Calcutta)

B.A./B.Sc. FOURTH SEMESTER EXAMINATION, MAY 2019

SECOND YEAR [BATCH 2017-20]

Date : 25/05/2019 **MICROBIOLOGY (General)**

Time : 11 am – 1 pm **Paper : IV** Full Marks : 50

Group A

Answer **any five** of the following questions: [5×5]

1. a) What are the different phenotypes which the naturally occuring plasmids confer on their host cells act as maker?

   b) Write down the characteristics of an ideal plasmid vector. (2+3)

2. a) Write down the features of PUC8/9 vector.

   b) How does lacZ gene used for vector selection. (2+3)

3. a) Write a note on calcium phosphate transfection process.

   b) What is electroporation? (3+2)

4. a) "Somatic cell nuclear transfer method used for making clone of an organism" - Explain.

   b) What is lipofection? (3+2)

5. a) Write down the properties of a good host.

   b) What is bifunctional vector? (3+2)

6. a) Differentiate between point mutation and frameshift mutation.

   b) Define 'prototroph' and 'auxotroph'. (3+2)

7. Write down the process of bacterial conjugation. How does it differ from transduction mechanism? (3+2)

8. a) What are F strains?

   b) What do you mean by error prone repair?

   c) List out the various physical and chemical mutagens. (1+1+1.5+1.5)

9. a) Briefly describe the Lederberg and Tatum's experiment for the demonstration of genetic recombination between bacterial cells.

   b) What is tautomeric Shift? (4+1)

10. Write down the principle and procedure of Ames test to assess the mutagenecity of compound. (5)

Group B

Answer **any five** of the following questions: [5×5]

11. What is antibiotic? What are the different target sites of antimicrobial drugs? (2+3)

12. Draw the basic structure of penicillin. How does penicillin inhibit bacterial cell? (2+3)

13. What is normal flora? Give an example. write down its beneficial role? (2+1+2)

14. How do griseofulvin amphotericin B differ by their mode of action? (5)

15. Define the following terms with example- (2.5+2.5)

    a) Pathogenecity

    b) Nosocomical infections

16. a) Give an example each of a primary lymphoid organ and a secondary lymphoid organ.

    b) All immunogens are antigen but reverse is not truth. Explain.

    c) What is hapten? (2+2+1)

17. a) Which type of T cells take part in humoral and cell mediated immune response respectively.

    b) What are memory B cells?

    c) Distinguish between avidity and affinity of an antibody. (2+1+2)

18. a) What are epitope and agritope? (2)

    b) What are APC? Why does antigen presentation is important for both humoral and cell mediated immunity? (1+2)

19. a) What are interferon? (1)

    b) Write down the principle and application of radical immuno diffusion tenhnique. (2+2)

20. a) Write down the structure and function of Ig G. (2+2)

    b) What are mitogens? (1)

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