

# RAMAKRISHNA MISSION VIDYAMANDIRA

(Residential Autonomous College affiliated to University of Calcutta)

B.A./B.Sc. FOURTH SEMESTER EXAMINATION, JUNE 2022

SECOND YEAR [BATCH 2020-23]

MICROBIOLOGY (GENERAL)

Date : 27/06/2022

Time : 11 am – 1 pm

Paper : IV

Full Marks : 50

Answer **any five** questions of the following:

[5×2]

1. a) Define the term: - septicaemia and septic shock.
- b) How does lysozyme in the mucus that lines the portal of entry protect against infections?
- c) What do you mean by quorum sensing?
- d) Give two examples of PGPR?
- e) What do you mean by propagation of virus?
- f) What are prions?
- g) 'The mechanism of antimicrobial action caused by desiccation is similar to that caused by plasmolysis.' Explain why?
- h) 'Moist heat is more effective than dry heat for the destruction of microorganisms'. Explain.

Answer **any four** questions of the following:

[4×10]

2. a) Describe three protective roles of normal microbiota.
- b) 'Microbiota changes with ages' - Explain with the help of a suitable example.
- c) Differentiate between resident and transient microbiota.
- d) Name one normal flora of GI tract. (3+3+3+1)
3. a) 'Most protein toxins are A-B toxins' - what are the general functions of A and B parts?
- b) What is the biological significance of adhesion?
- c) Write down the important characteristic features of endotoxin.
- d) Distinguish between ID<sub>50</sub> and LD<sub>50</sub>. (4+2+3+1)
4. a) How does rhizospheric soil differ from bulk soil?
- b) Write down the function of mycorrhizal fungi.
- c) How do phyllospheric bacteria help in plant growth?
- d) How do plant growth promoting rhizobacteria enhance plant growth? (2+3+2+3)
5. a) Explain the relationship between *Trichonympha* and termite.
- b) Write down the difference between commensalism and amensalism.
- c) Justify that rumen is an anaerobic fermentation chamber.
- d) Discuss about ectoparasitic nematophagous fungi. (3+2+2+3)
6. a) Explain in detail about Baltimore classification of viruses. (10)
7. a) Mention important differences between 'sterilization' and 'pasteurization'.
- b) Briefly describe the mode of action and practical application of heavy metals for the destruction of microorganisms.
- c) A disinfectant is found to have a phenol coefficient of 3.0. What does this mean?
- d) Explain the term 'cationic detergents'. (3+4+2+1)

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