

# RAMAKRISHNA MISSION VIDYAMANDIRA

(Residential Autonomous College affiliated to University of Calcutta)

B.A./B.Sc. FIRST SEMESTER EXAMINATION, DECEMBER 2019

FIRST YEAR [BATCH 2019-22]

MICROBIOLOGY [Honours]

Date : 11/12/2019

Time : 11 am – 1 pm

Paper : I (CC1)

Full Marks : 50

1. Answer **any ten** questions of the following: (10×2)
  - a) What is ERIC PCR ?
  - b) Give example of two agriculturally important microbes involved in plant disease control.
  - c) Differentiate between nitrobacter and nitrosomonas.
  - d) Define Strain and Serovar.
  - e) Who were the pioneer discoverers of enrichment media & agar as the solidifying agent in culture media?
  - f) What do you mean by epiphytic algae ?
  - g) What is palmelloid alga ?
  - h) What is oogamy ?
  - i) Give example of a brown algae with its class.
  - j) What is prion ?
  - k) What is meant by Tyndalization ?
  - l) Mention the one unique feature of plasma membrane & cell wall of Archae bacteria.
  - m) What is meant by schizogony ?
  - n) Give example of fungi forming septate & nonseptate hyphae respectively.
  - o) What is meant by plasmodium in relation to fungi.
  
- Answer **any three** questions from Question Nos. 2 to 6: (3×10)
  2.
    - a) Write down three salient features of algae. [3]
    - b) Write down the application of *Laminaria*. [2]
    - c) How do hypospores differ from aplanospores ? [2]
    - d) Explain diplontic life cycle of algae with an example. [3]
  
  3.
    - a) Do you think rRNA is an ideal molecule for detecting the relatedness amongst distant species ? Explain your answer. [2]
    - b) “Only if two microorganisms also are alike phenotypically do their similar G + C content suggest close relatedness” –Explain this fact. [2]
    - c) How does DNA-DNA hybridization used to study only closely related organisms ? [2]
    - d) What is a phenogram ? How does it differ from a cladogram ? [2+2]
  
  4.
    - a) Write down the salient features of alphaproteobacteria. [2]
    - b) How do archaeal cell wall and cell membrane differ from true bacteria ? [2]

- c) Write down the important features of followings: [2+2+2]
- i) Azospirillum
  - ii) Rhizobium
  - iii) Brodetella
5. a) Give a brief account of different types of methanogens. [3]
- b) Differentiate between green & purple sulfur bacteria. [2]
- c) Which phase of plasmodium cause pathogenesis in human during malaria ?  
What is ookinete stage ? [1+1]
- d) What do you mean by polyphasic bacterial taxonomy ? What are its component ? [1.5+1.5]
6. a) What are different types of sexual & asexual spores formed by fungi? Write with proper example. [3]
- b) What is “bread mould”? Write some salient features of “toad stool”. [1+2]
- c) Write about the contribution of Leeuwenhoek & Lister in the early developmental phase of the subject Microbiology. [2+2]

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