

RAMAKRISHNA MISSION VIDYAMANDIRA

(Residential Autonomous College affiliated to University of Calcutta)

B.A./B.Sc. FOURTH SEMESTER EXAMINATION, AUGUST 2021

SECOND YEAR [BATCH 2019-22]

MICROBIOLOGY (GENERAL)

Date : 13/08/2021

Time : 11.00 am - 1.00 pm

Paper : IV

Full Marks : 50

1. Answer **any ten** questions of the following : [10×1]
- Define the term 'germicide' and 'antiseptic'.
 - What is 'fractional sterilization'?
 - Why methyl alcohol is not generally employed for the destruction of microorganisms?
 - Give an example of terminal electron acceptor during anaerobic respiration.
 - What is TPP?
 - What do you mean by exotoxin?
 - What is phagolysosome?
 - Give example of one DNA and RNA containing virus.
 - What are temperate phage?
 - What do you mean by tissue tropism?
 - What do you mean by persistent infection?
 - Name two food borne disease.
 - Which organism are responsible for spoilage of egg?
 - What is brewing?
 - Define fermentation.

Answer **any four** questions of the following : [4×10]

- Explain in detail about various cultivation process of any animal virus in laboratory. What are the methods followed for detecting viral growth in laboratory? [8+2]
- Differentiate between plant and bacterial photosynthesis process. Explain how anoxygenic photosynthesis process takes place in bacteria with the help of one photosystem apparatus. [6+4]
- Mention important differences between 'sterilization' and 'disinfection'.
 - Discuss the mode of action and practical applications of heavy metals for the destruction of microorganisms.
 - The mechanism of antimicrobial action caused by desiccation is similar to that caused by plasmolysis. Explain why?
 - Write a short note on 'pasteurization'. [3+(2+1)+2+2]
- What is a membrane or molecular filter? How does it differ from older types of bacteriological filters in terms of how it removes microorganisms?
 - Discuss the various factors affecting the efficacy of different antimicrobial methods used for the destruction of microorganisms.
 - Define 'thermal death point' and 'thermal death time'.
 - Why is moist heat more effective than dry heat for the destruction of microorganisms? [(1+2)+3+2+2]

6.
 - a) What is the site of Krebs cycle in a bacterial cell? What is the net yield of GTP during Krebs cycle from 1 molecule of glucose?
 - b) Show the energy-requiring reactions during glycolysis.
 - c) Fermentation is energetically inefficient- explain
7.
 - a) Define normal flora. [2+4+4]
 - b) Write down the role of adhesins in bacterial pathogenicity citing an example.
 - c) Give an example of spreading factor and explain its function? [2+4+4]
8.
 - a) Why Milk is pasteurized but not sterilized?
 - b) Why food spoilage mostly occurs by bacteria than yeasts and moulds?
 - c) Write short note on microbiology of canned food spoilage.
 - d) What are SCP? Give example. [2.5+2.5+2.5+2.5]
9.
 - a) Mention the name of microorganism involved for the production of
 - i) Ethanol
 - ii) Citric acid
 - iii) Vinegar
 - iv) Amylase
 - v) Penicillin
 - b) Write down the differences between primary metabolites and secondary metabolites.
 - c) Name any two bioreactor used in industrial production of a valuable product. [(1×5)+3+2]

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