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M.Sc. (CBCS) DEGREE EXAMINATION,
NOVEMBER 2021

First Semester

Microbiology – Core

GENERAL MICROBIOLOGY AND DIVERSITY

(For those who joined in July 2017 onwards)

Time : Three hours

Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

1. Scientist who named microorganism as animalcules.
 - (a) Louis Pasteur
 - (b) Laziaro Spalanzanni
 - (c) Hershey and chase
 - (d) Anton Von Leeuwenhoek

2. Exomicrobiology dealt with
 - (a) Role of microbes in leaching of minerals
 - (b) Role of microbes in Nitrogen fixation
 - (c) Role of microbes in environmental relation
 - (d) Role of exploring of microbes in outer space

3. In fluorescence microscopy, which of the following performs the function of removing all light except blue light?
 - (a) Exciter filter
 - (b) Barrier filter
 - (c) Dichroic mirror
 - (d) Mercury arc lamp

4. The staining technique used to stain the metachromatic granules of *Corynebacterium B.*
 - (a) Giemsa stain
 - (b) Alberts stain
 - (c) Acid-fast stain
 - (d) Both (a) and (b)

5. Which of the following disinfectants act by disrupting microbial membranes?
- (a) Cationic detergents
 - (b) Halogens
 - (c) Heavy metals
 - (d) Aldehydes
6. Which of the following method can be used to determine the number of bacteria quantitatively?
- (a) Streak plate
 - (b) Spread plate
 - (c) Pour plate
 - (d) Pour plate and spread plate
7. Which of the following is bread molds?
- (a) Basidiomycota
 - (b) Lichens
 - (c) Zygomucota
 - (d) AM fungi
8. Majorly, Lichens are the pollution indicators of
- (a) Co
 - (b) Mercury
 - (c) NO₂
 - (d) SO₂

9. Heterocyst is a structure found in blue green algae which is associated with
- (a) Reproduction
 - (b) Nitrogen fixation
 - (c) Respiration
 - (d) Locomotion
10. Which of the following Plasmodium spp is considered to be the one causing a greater number of mortality rates throughout the world?
- (a) Plasmodium knowlesi
 - (b) Plasmodium malariae
 - (c) Plasmodium falciparum
 - (d) Plasmodium vivax

PART B — (5 × 5 = 25 marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 250 words.

11. (a) Discuss spontaneous generation theory.

Or

- (b) Write a note on 16s rRNA sequencing.

12. (a) Write the principles of fluorescence microscopy.

Or

(b) How will you observe fungal spore adopt a suitable staining method?

13. (a) What are the various enrichment media used for the cultivation of microorganism explain with suitable example.

Or

(b) Explain about biological indicator used for validation of sterilizer.

14. (a) Give general characteristics of fungi.

Or

(b) What are the characteristics of Basidiomycetes?

15. (a) State the environmental significance of Blue green algae.

Or

(b) Illustrate life cycle of Plasmodium sp.

PART C — (5 × 8 = 40 marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 600 words.

16. (a) Give detailed account on historical perspective of Microbiology.

Or

- (b) Explain in detail the importance of Bergey's manual of systematic bacteriology.

17. (a) Write the principle and application of Transmission electron microscopy.

Or

- (b) Why staining of bacteria required? Classify different staining methods.

18. (a) What is sterilization? How will you sterilize the following?

- (i) Culture media
- (ii) Aseptic chamber
- (iii) Solutions.

Or

- (b) What is mean by pure culture? List the different method for isolation of microorganisms.

19. (a) Write in detail about economic importance of Lichens.

Or

(b) Explain the general characteristics and significance of Zygomycetes.

20. (a) Differentiate Phaeophyta and Rhodophyta based on their characteristics.

Or

(b) Write in detail about Entamoeba histolytica.
