

M.Sc. (CBCS) DEGREE EXAMINATION, APRIL 2023

First Semester

Microbiology-Core

GENERAL MICROBIOLOGY AND DIVERSITY

(For those who joined in July 2021 onwards)

Time : Three hours

Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

1. The scientist who designed a system of antiseptic surgery \_\_\_\_\_
  - (a) Robert Koch
  - (b) Joseph Lister
  - (c) Charles Chamberland
  - (d) None

2. Fastest known bacterium on the earth is \_\_\_\_\_
  - (a) Epulopscium Fischelsonii
  - (b) Methano caldococcus
  - (c) Thiovuim majus
  - (d) E.coli
3. All the following apply to the negative stain procedure except \_\_\_\_\_
  - (a) It utilizes a dye such as nigrosin
  - (b) microorganisms repel the dye
  - (c) microorganisms satin deeply
  - (d) an acidic dye is used
4. The maximum magnification available to most bright-field microscopes is \_\_\_\_\_
  - (a) One million times
  - (b) One Thousand times
  - (c) One hundred Thousand times
  - (d) Ten times
5. The media that supports growth of all type of microorganisms are known as \_\_\_\_\_ media.
  - (a) Enrichment
  - (b) Common
  - (c) General purpose
  - (d) Specialized media

6. A culture broth tube was very turbid at the surface but clear throughout the rest of the tube indicating that the \_\_\_\_\_
  - (a) Organisms are aerobes
  - (b) Organisms should be grown in an anaerobic chamber
  - (c) Organisms cannot produce superoxide dimutase and catalase
  - (d) Organisms cannot tolerate oxygen
7. Lichens are Organisms of symbiotic association with \_\_\_\_\_
  - (a) Fungi and algae
  - (b) Fungi and bacteria
  - (c) Bacteria and algae
  - (d) Fungi and viruses
8. Which component is present in the cell wall of fungi?
  - (a) Cellulose
  - (b) Hemicellulose
  - (c) Chitin
  - (d) Pectin
9. Which of the following are formed in pyrenoids?
  - (a) oil
  - (b) glucose
  - (c) starch
  - (d) silica

10. The feeding form of a protozoan is known as the \_\_\_\_\_
  - (a) cyst
  - (b) Heterocyst
  - (c) tronchondon
  - (d) trophozoite

PART B — (5 × 5 = 25 marks)

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

Each answer should not exceed 250 words.

11. (a) Distinguish Haeckel and Carl woese Classification.  
Or  
(b) Differentiate, bacteria and Archaea.
12. (a) Write briefly about dark field microscopy.  
Or  
(b) Illustrate about metachromatic granules staining.
13. (a) Describe briefly about preservation methods used in microbiology laboratory.  
Or  
(b) Explain briefly about enriched media.

14. (a) Describe in detail about Pyrrophyta.

Or

(b) Collect the important characters of Lichens.

15. (a) Explain the general characters of Phaeophyta with example.

Or

(b) Explain briefly about Blue green algae.

PART C — (5 × 8 = 40 marks)

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

Each answer should not exceed 600 words.

16. (a) Compare Microbiology its origin and today's Microbiology?

Or

(b) Discuss in detail about 16S r RNA sequencing.

17. (a) Describe in detail about principle and application for Fluorescence Microscopy.

Or

(b) Illustrate spore staining method with diagram.

18. (a) Focus on indicator microorganisms for sterilization methods.

Or

(b) Select and Explain about the important methods of isolation of microorganism.

19. (a) Write a detail notes on Zycomycetes.

Or

(b) Describe in detail about Ascomycetes.

20. (a) State the important characters of Rhodophyta.

Or

(b) List the General characters, locomotion, nutrition and representation of plasmodium Sp.