



Progressive Education Society's
Modern College of Arts, Science & Commerce Ganeshkhind, Pune – 16
End Semester Examination: Jan.2022
Faculty: Science and Technology

Program: B.Sc.

Semester: I

SET: C

Program (Specific): Microbiology

Course Type: Theory

Class: F.Y. B.Sc.

Max.Marks: 35

Name of the Course: Basic techniques in Microbiology

Time: 2Hr

Course Code: 22-MB-112

Paper: II

Instructions to the candidate:

- 9) *There are 4 sections in the question paper. Write each section on separate page.*
- 10) *All Sections are compulsory.*
- 11) *Figures to the right indicate full marks.*
- 12) *Draw a well labelled diagram wherever necessary.*

SECTION: A

Q1) Answer the following.

5 marks

I) In bright field microscope having eyepiece lens of 15 X and objective lens of 10X the total magnification achieved is _____.

- | | |
|---------|---------|
| c) 55X | b) 150X |
| c) 4.5X | d) 450X |

II) Sterilization in laminar air flow is achieved on the basis of _____.

- | | |
|---------------------------------|------------------------------|
| a) UV radiations and filtration | b) moist heat and filtration |
| c) dry heat and filtration | d) microwaves and filtration |

III) In _____ secondary electrons emitted by object are important for image formation .

- | | |
|---------------------------|----------------------------|
| a) SEM | b) TEM |
| c) Fluorescent microscope | d) bright field microscope |

IV) Define chromophore group in stains.

V) Define fixative .

Q2) Answer any four of the following.

4 marks

- I) Why are Copper vessels suggested for storing drinking water ?
- II) How Oil immersion lenses have high resolving power .
- III) What is magnification?

- IV) Give two modifications in fluorescent contrast microscope.
- V) Give three important characteristics of ideal disinfectant.
- VI) What is role of phenol in Acid Fast Staining ?

SECTION: B

Q3) Answer any four of the following. 8 marks

- I) Enlist two chemical disinfectants belonging to halogen groups and their applications.
- II) Compare types of objective lenses.
- III) How image formation takes place in SEM
- IV) What are chromatic aberrations? Explain.
- V) Explain importance of time of incubation of test culture with disinfectant during phenol coefficient.
- VI) Explain what will happen if heating is not done during spore staining.

SECTION: C

Q4) Answer any four of the following. 8 marks

- I) Explain use of halogen compounds in disinfection.
- II) Role of phenol as disinfectant.
- III) Summarize type of aberrations.
- IV) Gamma radiations are ionizing radiations. Justify
- V) Classify the chemical or physical agents as Decolorizing agents, Accentuator and Mordant. Example –Alcohol, Iodine, Heat, Acetone, phenol, Acid.
- VI) Resolving power of electron microscope is higher than bright field microscope. Justify why?

SECTION: D

Q5) Attempt any two of the following 10 marks

- I) Explain Negative staining
- II) Application of UV light as agent for sterilization
- III) Discuss role of body tube and condenser in functioning of microscope.
- IV) Explain phenol coefficient.