

2303000501026001-A
EXAMINATION MARCH-APRIL 2024
BACHELOR OF SCIENCE (NCF-NEP)
(FIRST SEMESTER) (ATKT)
MAJOR - 2 MICROBIOLOGY PAPER - II
THEORY LEVEL 3
MICROSCOPY AND STAINING TECHNIQUES

[Time: As Per Schedule]

[Max. Marks: 35]

Instructions:

1. Fill up strictly the following details on your answer book
 - a. Name of the Examination : **BACHELOR OF SCIENCE (NCF-NEP)(FIRST SEMESTER) (ATKT)**
 - b. Name of the Subject : **MAJOR - 2 MICROBIOLOGY PAPER - II THEORY LEVEL 3 MICROSCOPY AND STAINING TECHNIQUES**
 - c. Subject Code No : **2303000501026001-A**
2. Sketch neat and labelled diagram wherever necessary.
3. Figures to the right indicate full marks of the question.
4. All questions are compulsory.

Seat No:

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Student's Signature

Q.1 Answer in very short. (Any Five)

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- a. State the correlation between strength of lens and focal length.
- b. Define: Resolution.
- c. Name two dyes used in fluorescence microscope.
- d. Define: fixation. State the types of fixations.
- e. What is 'electron dense' region? - Explain.
- f. State the full name of AFM. Give one application of it

Q.2 Answer the following in brief. (Any Two) 10

- a. Explain importance of refractive index in imparting image in microscope.
- b. Resolution plays a major role in microscopy & microbiology. - Justify.
- c. Define: mordant and intensifier. Discuss mordants and intensifiers as important components of staining.

Q.3 Answer the following in brief. (Any Two) 10

- a. State the importance of Dark-field & Phase contrast microscopy.
- b. Explain how differential staining procedures will be helpful in identifying an Organism.
- c. Confocal Microscopy - Describe in detail.

Q.4 Answer the following in brief. (Any Two) 10

- a. Use of electron microscopes has transformed microscopy. - Explain.
- b. Structure & functions of cells and viruses can be decoded by electron cryotomography. -- Explain.
- c. Scanning Tunneling Microscope - Explain.
