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Total No. of Pages : 02

Total No. of Questions : 11

**M.Sc (Medical Microbiology) (Sem.3)**  
**HISTOPATHOLOGY AND CYTOLOGY**

Subject Code : MMB-303-21

M.Code : 92527

Date of Examination : 16-06-2025

Time : 3 Hrs.

Max. Marks : 70

**INSTRUCTIONS TO CANDIDATES :**

1. SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.
2. SECTION-B contains EIGHT questions carrying FIVE marks each and students have to attempt any SIX questions.
3. SECTION-C will comprise of two compulsory questions with internal choice in both these questions. Each question carries TEN marks.

**SECTION-A**

**1. Write Briefly :**

- a) Enlist various hormones involved in regulation menstrual cycle.
- b) Define fixation in histopathology.
- c) Give a brief idea about preservation in the context of histological specimens.
- d) Define haematoxylin and eosin stain.
- e) What is cryostat?
- f) Enlist different knives used for cutting ultrathin sections.
- g) Give a brief idea about immunofluorescence staining.
- h) Give a brief idea about automatic coversliper.
- i) Define the Gram stain and its significance in bacterial identification.
- j) Give a note on Gimenez method for detecting Helicobacter pylori.

## SECTION - B

2. Discuss the role of hormonal fluctuations in the menstrual cycle.
3. Evaluate the importance of proper lab organization in ensuring accurate histopathological analysis.
4. Discuss the process of tissue processing in histopathology including dehydration, clearing, and embedding.
5. Discuss the process of preparing frozen sections of muscle biopsy specimens.
6. Evaluate the collection techniques and fixation processes for various cytological samples.
7. Evaluate the importance of cytological screening protocols and quality control measures in ensuring reliable cytological interpretations.
8. Describe the histochemical reactions involved in enzyme detection.
9. Write a note on Warthin-Starry method in identifying specific microorganisms.

## SECTION-C

10. Explain the different types of histological specimens commonly encountered in pathology labs, including their transportation, preservation, labeling and fixation methods.

**OR**

Describe the procedures for specimen preparation in electron microscopy, including fixation, tissue processing schedules and ultramicrotomy.

11. Explain the principles, procedure and applications of Immunohistochemistry (IHC) in cytology.

**OR**

Discuss the various staining methods used for the detection and identification of bacteria including their effectiveness and limitations.

**NOTE : Disclosure of Identity by writing Mobile No. or Marking of passing request on any paper of Answer Sheet will lead to UMC against the Student.**