



## **ED-321**

M.Sc. 1st Semester  
Examination, March-April 2021

### **ZOOLOGY**

Paper - IV

Tools and Techniques in Biology

*Time* : Three Hours]      [*Maximum Marks* : 80

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**Note** : Answer **all** questions in which Question Number 1 is compulsory. All questions carry equal marks.

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1. (a) Describe principle of partition chromatography.
  - (b) Differentiate between transmission electron microscopy and scanning electron microscopy.
  - (c) Explain chemical basis of fixation by formaldehyde.
  - (d) Describe various precautions to be taken to maintain aseptic conditions during media preparation.
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*(Turn Over)*

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**Unit-I**

2. Describe principle, working and application of Spectrophotometer.

**OR**

Give an account of PAGE using SDS gel system.

**Unit-II**

3. Describe principle, construction and application of interference microscope.

**OR**

What is Fluorescence ? Give the principle and instrumentation to utilize this property of matter for microscopy.

**Unit-III**

4. Write an essay on biological assays in vivo.

**OR**

What are different fixatives used to fix biological tissues ? Give merits and demerits of each fixative.

**Unit-IV**

5. What is DNA hybridization ? How is it achieved ? Why is it important ?

**OR**

Write an essay on freeze techniques.