

PC – 273 CV-19  
(552) M.Sc. ZOOLOGY (SECOND SEMESTER)  
Term End Examination JUNE 2020

Compulsory/Optional      Group      Paper - IV      TOOLS AND TECHNIQUES FOR BIOLOGY  
Time: Three Hours]      [Maximum Marks : 080      [Minimum Pass Marks :029

नोट :- दोनों खण्डों से निर्देशानुसार उत्तर दीजिए। प्रश्नों के अंक उनके दाहिनी ओर अंकित हैं।

**Note: Answer From Both the Section as Directed. The Figures in the right-hand margin indicate marks.**

**SECTION - A**

1. Answer the following question in few words: 1X10
- (a) Name the different type of Reference electrode used in  $P^H$  meter.
  - (b) Write the use of Condenser lens of light microscope.
  - (c) What is the basic difference between TEM and SEM on the basis of image formation pattern?
  - (d) Write the function of auto clave.
  - (e) What do you understand by Ceu harvesting?
  - (f) What do you understand by DNA "Biosensors".
  - (g) Define Cryopreservation.
  - (h) Define Rf value.
  - (i) What do you understand by RPM of Centrifuge.
  - (j) Why we perform Coomb's test?
2. Answer the following short- answer type question: 2x5
- (a) Calculate the  $P^H$  of a Solution in Which  $[H^+] = 4.5 \times 10^{-6}$  State whether the solution is acidic, basic or Neutral.
  - (b) Write the Beer's-Lambert's Law.
  - (c) What do you understand by inoculation and sterilization?
  - (d) What is ELISA test? Write its application.
  - (e) What is PAGE? Write its application.

**SECTION - B**

- Answer the following long-answer type question:- 15x4
3. Write the principle and application of spectrophotometer.
- OR
- Write the principle of light microscope. Describe the phase Contrast microscope and explain how a image form in phase contrast microscope with suitable ray diagram.
4. Write about the Various method of media preparation and sterilization.
- OR
- Write Short note on-
- (a) Cell proliferation measurement.      (b) Cell harvesting method.
5. Write about the immunological techniques based on agglutination and precipitation reaction of Antigen-antibody reaction.
- OR
- Write Short note on-
- (a) Cryotechnique for light microscopy.      (b) Biosensors.
6. Write the Principle of Centrifuge and explain how organelle Separated by Centrifuge.
- OR
- Write Short note on-
- (a) Gel electrophoresis.      (b) Paper Chromatography.

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