5. (*a*) Describe the concepts of chemotaxonomy, Cytotaxonomy and Numerical taxonomy.

   (*b*) Describe the ecology and physiology of taxonomy.

6. (*a*) Write an account on the methods of preservation and identification of animals.

   (*b*) Explain the history of taxonomy and its importance.

2019

Time : 2 hours

Full Marks : 40

Answer any **four** questions from any **one** Group as per your specialisation

The questions are of equal value

Candidates are required to answer in their own words as far as practicable

Draw neat labelled diagrams wherever necessary

GROUP – A

(PLANT ANATOMY, EVOLUTION, EMBRYOLOGY, DEVELOPMENT BIOLOGY)

1. (*a*) Describe the secondary growth in the monocot plants.

   (*b*) Write an account on the principles of arrangement of mechanical tissues.

2. (*a*) Explain the isolation and isolating mechanisms.

   (*b*) Enumerate the sympatric and allopathic populations.

3. (*a*) Describe the development of microsporo-genesis.

   (*b*) Describe the development of Monocot embryos.

4. (*a*) Describe the isolation, culture and fusion of protoplasts.

   (*b*) Write an account on the types of embryos.

5. (*a*) Describe the process of germination and senescence.

   (*b*) Describe the molecular mechanism of responses of plant to Gibberellins.

6. (*a*) Describe the regulation of plant growth and Development.

   (*b*) Explain the molecular mechanism of responses of plants to ABA.

GROUP – B

(ANIMAL PHYSIOLOGY, EVOLUTION AND TAXONOMY)

1. (*a*) Describe the mechanism of nerve impulse condition and synpatic transmission.

   (*b*) Write an account on Muscle contraction and its importance.

2. (*a*) Explain breathing and gaseous exchange and also transportation of gases.

   (*b*) Describe the cardiac cycle and its regulation.

3. (*a*) Describe the process of fossilization, and some Indian fossils.

   (*b*) Explain the patterns of evolution.

4. (*a*) Describe the continental drift and animal distribution.

   (*b*) Write an account on Hardy-Weinberg's Law and its importance.