

<b>CSM – 71/20</b>
<b>Zoology</b>
<b>Paper – II</b>

*Time : 3 hours*

*Full Marks : 300*

*The figures in the right-hand margin indicate marks.*

*Candidates should attempt Q. No. 1 from Section – A and Q. No. 5 from Section – B which are compulsory and any **three** of the remaining questions, selecting at least **one** from each Section.*

### **SECTION – A**

1. Write an account of any **three** of the following :

**20×3 = 60**

- (a) Meiotic prophase
- (b) Structure, composition and functions of microtubules
- (c) Principle and application of DNA fingerprinting
- (d) Vestigial organs as evidences of Evolution

2. Write an account on types of sex chromosomes and sex determination in animals. 60
3. With attention on geological time scale, describe the evolutionary history of *Homo sapiens*. From their ancestors *Dryopethicus*. 60
4. Write short notes on the following :  $15 \times 4 = 60$ 
  - (a) Role of Biochemistry and Physiology in Taxonomy
  - (b) Gene therapy in medicine
  - (c) Allopatric and sympatric speciation
  - (d) Types of DNA polymerases

### SECTION – B

5. Write notes on any three of the following :  $20 \times 3 = 60$ 
  - (a) Cori cycle
  - (b) Synaptic transmission
  - (c) Apoptosis
  - (d) Bacteriophages

6. With suitable diagrams, describe the structure and functions of Nephron. 60
7. What is primary and secondary immune mechanism ? Describe the synthesis, structure and types of immunoglobulins with their specific functions. 60
8. Write notes on the following : 15×4 = 60
- (a) Theories of thermodynamics
  - (b) Metamorphosis and role of hormones in insect metamorphosis
  - (c) Mode of action of protein and peptide hormones
  - (d) Ultrastructure of male gamete.

