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# OPSC OAS (Mains)

Previous Year Paper  
(Zoology-II) 2020



**CSM – 71/20**

**Zoology**

**Paper – II**

*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

RO – 56/3

(Turn over)

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 : 15×4 = 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 : 20×3 = 60
- (a) Cori cycle
  - (b) Synaptic transmission
  - (c) Apoptosis
  - (d) Bacteriophages

RO – 56/3

(2)

Contd.

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.

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