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# **HPPSC Forest Range Officer**

**Previous Year Paper  
Mains 2017 Zoology**



This question paper contains **3** printed pages]

**CODE : FRO-2017**

**ZOOLOGY**

*Roll No. ....*

*Time : 3 Hours*

*Maximum Marks : 200*

- Note :—* (1) Question paper consists of *two* parts viz. Part I and Part II. Each part contains *four* questions. The paper as a whole carries eight questions. Question Nos. 1 and 5 are compulsory. The candidates are required to attempt *three* more questions out of the remaining six questions taking at least *one* question from each part *i.e.*, this is in addition to the compulsory question of each part. Attempt *five* questions in all. All questions carry equal marks. The parts of a question are to be attempted at one place in continuation. Answers should be brief and to the point.
- (2) Parts of same question must be attempted together and not to be attempted in between the answers to other questions.

P.T.O.

**PART-I**

1. With the help of suitable diagram give a comparative account of Central Nervous System of vertebrates. 40
2. Write accounts on : 20+20=40
  - (a) Structure and life history of Malarial parasite
  - (b) Canal system in Porifera.
3. Write notes on : 20+20=40
  - (a) Polymorphism in Hydrozoa
  - (b) Crustacean Larvae.
4. Write notes on any two of the following : 20+20=40
  - (a) Torsion and Detorsion in Gastropoda
  - (b) Mechanism of Locomotion in Starfish
  - (c) Retrogressive Metamorphosis
  - (d) Reproductive system of Leech.

**PART-II**

5. With the help of suitable diagram explain the Watson and Crick Model of DNA. Add a note on Semiconservative mode of DNA replication and the experimental evidence to prove it. 15+10+15=40

6. Describe the development, structure and functions of different types of placentas in Mammals. 40
7. Write notes on the following : 20+20=40
- (a) Sex determination mechanisms in animals
  - (b) Structure of muscle fiber and physiology of muscle contraction.
8. Write accounts on any two of the following : 20+20=40
- (a) Histology of Blood and Pancreas
  - (b) Fate map of Frog.
  - (c) Structure of Mitochondria and its role as “power-house of the cell”.
  - (d) Discuss Hardy Weinberg’s law of equilibrium. Describe various evolutionary forces that tend to disturb genetic equilibrium.