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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.