

HCS (200) 2003

Code—23

ZOOLOGY

*Time Allowed : 3 Hours*

*Maximum Marks : 150*

**Note :** Attempt any *Five* questions. All questions carry equal marks. Q. No. 1 is compulsory. Answer *two* questions from Part I and *two* questions from Part II. The parts of the same question must be answered together and must not be interposed between answers to other questions.

- I. Write critical notes on any *four* of the following : (4×7½=30)
- (a) Polymorphism in Hydrozoa
  - (b) Induced breeding in Carps
  - (c) The role of pheromones in sexual behaviour
  - (d) Spontaneous and induced mutation

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- (e) Concept of species and subspecies
- (f) Mammalian placental types and their functions.

### Part I

2. Give an account of the canal system in Sponges. Explain the course of water circulation. How does the water flow maintained and adjusted ? What is the significance of canal system to sponge life ? (30)
3. Describe the dentition in mammals. Give the dental formula of man, dog and rabbit. (30)
4. What do you understand by environmental pollution ? How many types of pollutants exist in the biosphere ? Discuss the impact of these pollutants on humans. (30)

### Part II

5. What do you understand by  $\beta$ -oxidation of fatty acids ? Show different biochemical steps involved in the  $\beta$ -oxidation of fatty acids. (30)

6. Describe the ultrastructure of skeletal muscle and discuss the molecular mechanism of its contraction. (30)
7. Describe the ultrastructural morphology of mitochondria in animal cells. Explain the role of mitochondria in Krebs Cycle. (30)