

No. of Printed Pages : 2

CS-135/06

ZOOLOGY

Paper-II

Time : 3 Hours]

[Full Marks : 300

Note : (1) Candidates should attempt Question No. 1 from Section-A and Question No. 5 from Section-B which are compulsory, and any **three** of the remaining questions, selecting at least one from each Section.

(2) All questions carry equal marks.

SECTION – A

1. Differentiate any **three** of the following : **3 × 20 = 60**
 - (a) Mitosis and Meiosis
 - (b) Batesian mimicry and Mullerian mimicry
 - (c) Molecular taxonomy and Numerical taxonomy
 - (d) Cosmids and Phagemids
2. Explain the ultra structure and function of the plasma membrane in detail adding a note on the significance of ion transport. **60**
3. Elaborate the mechanism of sex determination adding a note on sex linked inheritance. **60**
4. Write short notes on the following : **4 × 15 = 60**
 - (a) Cell cycle checkpoints
 - (b) Mendels Laws of Inheritance
 - (c) Hardy-Weinberg law
 - (d) DNA fingerprinting

SECTION – B

5. Write explanatory notes on **three** of the following : **3 × 20 = 60**
 - (a) Digestion of protein in man.
 - (b) Derive Henderson-Hasselbach equation.
 - (c) Fate map of blastula of frog.
 - (d) Structure of T₄ virus.

6. Differentiate between hormone and pheromone. Discuss the mechanism of action of protein hormones with special mention on the synthesis and role of c-AMP as a second messenger. 60
7. What is the significance of metamorphosis in animal development ? Describe the various physiological, cellular and biochemical events that occur during the metamorphosis of frog larva. 60
8. Write notes on the following : 4 × 15 = 60
- (a) Laws of thermodynamics.
 - (b) TMV
 - (c) Coenzymes.
 - (d) Transplantation immunology.
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