



IAS ZOOLOGY (MAIN) - 2006
PAPER - I

Time Allowed: 3 hours

Maximum Marks: 300

Candidates should attempt Questions 1 and 5 which are compulsory, and any THREE of the remaining questions selecting at least ONE question from each Section.

Illustrate your answers with suitable diagrams wherever necessary.

Section 'A'

1. Write concise account of any three of the following in about 200 words each: 20 x 3 = 60
(a) Characteristics of Acoelomata and Coelomata with suitable examples and well-labelled diagrams.
(b) Integuments and its derivatives in vertebrates
(c) Canal system in Porifera
(d) Flight adaptations in birds
2. Describe the salient features of phylum Hemichordata. Classify the phylum up to classes giving their characteristics and suitable examples. 60
3. Write a detailed account of modification of mouthparts in insects and support your answer with well-labelled diagrams. 60
4. What is meant by migration? Write a detailed account of migration in fishes and its importance. 60

Section 'B'

5. Write brief account of any three of the following in about 200 words each: 20 x 3 = 60
(a) The ozone layer and its impact
(b) Methods of studying animal behavior
(c) Apiculture and its economic importance
(d) Null hypothesis
6. Define the terms Biome and Ecotone and describe major terrestrial biomes. 60
7. Give a detailed account of Biological rhythms and Biological clock. 60
8. (a) what is Student t-test? Explain its application with examples. 30
(b) Describe the principle and working of Geiger-Muller counter and its use in Biology. 30

IAS ZOOLOGY (MAIN) - 2006
PAPER - II

Time Allowed: 3 hours

Maximum Marks: 300

Candidates should attempt Questions 1 and 5 which are compulsory, and any THREE of the remaining questions selecting at least ONE question from each Section.

Illustrate your answers with suitable diagrams wherever necessary.

Section 'A'

1. Distinguish between any THREE of the following (each answer may be in about 200 words): 3 x 20 = 60
 - (a) TATA box and GC Box
 - (b) Plasmid and Cosmid
 - (c) Point mutation and missense mutation
 - (d) Homologous and analogous organs.
2. Describe Gene expression in prokaryotes and eukaryotes. Define transcription. 60
3. What is gene cloning? Give an account of standard vectors used in gene cloning. 60
4. Write short notes on the following: - 4 x 15 = 60
 - (a) Natural selection
 - (b) Mega evolution
 - (c) Genetic drift
 - (d) Chemotaxonomy.

Section 'B'

5. Write notes on any THREE of the following: 3 x 20 = 60
 - (a) Ketone bodies
 - (b) Structure of human eye
 - (c) Importance of placenta
 - (d) Theories of Cancer development.
6. Describe the structure & physiology of fat soluble vitamins. 60
7. What do you understand by osmoregulation? Describe the phenomenon and physiology of urine formation. 60
8. Write notes on the following: - 4x 15 = 60
 - (a) Gastrula formation
 - (b) Bear's law
 - (c) Determinate and indeterminate cleavages
 - (d) Ageing.