



**IAS ZOOLOGY (MAIN) - 2005
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: 20x3=60
 - (a) Characteristics of Rhynchocephalia and Crocodila.
 - (b) Illustrated account of the types of kidneys of vertebrates.
 - (c) Reproduction in protozoa.
 - (d) Discuss the morphological, anatomical & physiological flight adaptations in bird.

2. Describe the diagnostic characteristics of class mammalia. Classify it upto sub-classes giving the contrasting features of each with suitable examples. 60

3. Give a detailed account of Polymorphism in Coelenterates. Add a note on Metagenesis. 60

4. Describe the structure and adrenal cortex and medulla. Mention the hormones secreted by them and their regulatory influences. Add a note on the mechanism(s) of control of cortical and medullary hormones. 60

SECTION - B

5. Write brief account of any THREE of the following in .about 200 words each: 20x3=60
 - (a) Discuss Carbon Cycle. Add a note on the greenhouse effect.
 - (b) Describe Pavlov's experiments on conditioning and learning in animals.
 - (c) Discuss the vector, pathogen, treatment and prevention of Malaria.
 - (d) How an experiment is designed? Discuss Null Hypothesis.

6. Discuss the strategies adopted for conservation of natural resources and biological diversity in India. 60

7. What are the various species of silkworm? Describe the life history of mulberry silkworm. Add a note on the requirements for sericulture industry. 60

8. (a) what is Lambert-Beer's Law? Discuss the construction of spectrophotometer. Add a note on the applications of UV -visible spectrophotometry in biological studies. 30

- (b) Differentiate between correlation and regression. Discuss the methods used to study correlation. Add a note on the coefficient of correlation. 30

IAS ZOOLOGY (MAIN) - 2005
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. Differentiate any three of the following 20x3=60
(a) Transcription and Translation
(b) Pseudogene and Oncogene
(c) Miohippus and Modern horse
(d) Artificial and Natural Classifications
2. Describe detailed structure and functions of Mitochondria. 60
3. Explain mutations. Discuss their origin and role in evolution. 60
4. Define species. Describe the factors responsible for speciation. 60

SECTION - B

5. Explain the importance of any three of the following: 20x3=60
(a) Invasiveness of placenta
(b) Enzymes
(c) Pheromones
(d) In vitro fertilization
6. Explain how hormones and enzymes control the digestion of proteins, carbohydrates and fats among mammals. 60
7. What is a nerve impulse? Explain how it is conducted through nerve fibres. 60
8. What are fate maps? Give methods of drawing them. Describe the fate maps of chick embryo. 60