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UPSC IFS (Mains)

**Previous Year Paper
(Zoology- I)
02 Mar, 2022**



ZOOLOGY
Paper – I

Time Allowed : **Three Hours**

Maximum Marks : **200**

Question Paper Specific Instructions

Please read each of the following instructions carefully before attempting questions :

*There are **EIGHT** questions in all, out of which **FIVE** are to be attempted.*

*Questions no. **1** and **5** are compulsory. Out of the remaining **SIX** questions, **THREE** are to be attempted selecting at least **ONE** question from each of the two Sections A and B.*

Attempts of questions shall be counted in sequential order. Unless struck off, attempt of a question shall be counted even if attempted partly. Any page or portion of the page left blank in the Question-cum-Answer Booklet must be clearly struck off.

All questions carry equal marks. The number of marks carried by a question/part is indicated against it.

Neat sketches may be drawn, wherever required.

*Answers must be written in **ENGLISH** only.*

SECTION A

- Q1. Write a brief account about each of the following :** **8×5=40**
- | | |
|---|---|
| (a) Nutrition and Osmoregulation in Euglena | 8 |
| (b) Torsion in Gastropoda | 8 |
| (c) Ambulacral system in Asterias | 8 |
| (d) Archaeopteryx | 8 |
| (e) Feeding mechanism of Branchiostoma | 8 |

- Q2.** (a) Describe morphological structures of *Peripatus* and discuss its affinities. 15
- (b) What is polymorphism ? Explain different polymorphic forms in Coelenterates. 15
- (c) Describe the life history of *Taenia solium* and its parasitic adaptation. 10
- Q3.** (a) Give a comparative account of the aortic arches in Vertebrates. 15
- (b) Describe the larval forms of Crustacea with suitable diagrams. 15
- (c) Describe the salient features of Prototheria. Explain how it is different from Metatheria with example. 10
- Q4.** (a) Describe different patterns of fish migration and write about its significance. 15
- (b) Give an account of chemical nature and function of Neurohypophyseal hormones in mammals. 15
- (c) Describe the parental care in Amphibians with suitable examples. 10

SECTION B

- Q5. Differentiate between the following :** **8×5=40**
- (a) Indian major carps and Exotic carps 8
 - (b) Mean and Mode 8
 - (c) Natality and Mortality 8
 - (d) Navigation and Orientation behaviour in birds 8
 - (e) Hormones and Pheromones 8
- Q6.**
- (a) Write an account of the mission “Project Tiger” and mention the conservation strategies. 15
 - (b) What is the objective of courtship behaviour ? Describe courtship in *Drosophila* and three-spined stickleback. 15
 - (c) What is phosphorus cycle ? Describe the importance of phosphorus cycle as a component of Biogeochemical cycle. 10
- Q7.**
- (a) What are the different criteria for the selection of candidate species for aquaculture ? 15
 - (b) What is the working principle of Transmission Electron Microscope (TEM) ? Describe its application with suitable diagram. 15
 - (c) What is lac ? Describe in detail about the lac culture. 10
- Q8.**
- (a) What are the common malaria causing species ? Write an account of life cycle of malarial parasite and its pathogenicity in man. 15
 - (b) What are independent and dependent variables ? What is coefficient of correlation and how is it calculated ? Illustrate with formula and range of values (r). 15
 - (c) Write an account of Tiger Prawn culture with emphasis on seed resources and transportation. 10



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