



Previous Year Question Paper
of

UPSC – IFS EXAM
INDIAN FOREST SERVICE EXAM
ZOOLOGY MAIN Paper II
Examination

2015

(Original Question Paper UPSC IAS)

Union Public Service Commission Examination



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I.F.S. EXAM-2015

C-GEQ-O-APPB

ZOOLOGY

Paper - II

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.

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

Neat sketches may be drawn, wherever required.

SECTION A

- Q1. Write a relative account of each of the following : 8×5=40
- | | | |
|-----|---|---|
| (a) | Transport of small and large molecules across plasma membrane | 8 |
| (b) | Euploidy and Polyploidy | 8 |
| (c) | Homology and Analogy | 8 |
| (d) | Palaearctic and Nearctic regions | 8 |
| (e) | Plasmids and Cosmids | 8 |

- Q2.** (a) Describe the ultrastructure of mitochondrion and explain why it is considered as a symbiotic cell organelle. 20
- (b) What is Transcription ? Explain the initiation complex and the events leading to the formation of mRNA in eukaryotes. 20
- Q3.** (a) What is signal transduction ? With a labelled diagram, explain the steps involved. 20
- (b) Discuss the role of various isolating mechanisms in speciation. 20
- Q4.** (a) Give a historical account of naming an animal species and the validity of binominal system, adding a note on the role of International Code of Zoological Nomenclature (ICZN). 20
- (b) What is continental drift ? When did it occur and what are its evidences ? 20

SECTION B

- Q5. Write notes on each of the following :** **8×5=40**
- (a) Role of actin and myosin in muscle contraction 8
 - (b) Types of placenta 8
 - (c) Embryo transfer 8
 - (d) Cyclic AMP 8
 - (e) Ultrafiltration in mammalian kidney 8
- Q6. (a) Explain what initiates the process of blood coagulation and discuss the role of different factors.** **20**
- (b) Describe the complexity of inner ear and its mechanism of hearing.** **20**
- Q7. (a) Give an account of the structural and functional characteristics of IgE and IgM immunoglobulins.** **20**
- (b) What is oxidative phosphorylation ? Describe the steps involved in the process and add a note on the role of enzymes at every step, with a schematic diagram.** **20**
- Q8. (a) Explain the process of regeneration giving suitable examples from vertebrates.** **20**
- (b) Describe the fate map of gastrula with reference to frog.** **20**

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