

## ZOOLOGY

## Paper II

0000002

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.

Question Nos. **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'

- |       |  |         |
|-------|--|---------|
| 1.    | Write short notes on the following :   | 8×5=40  |
| 1.(a) | Fine structure of gene.  | 8       |
| 1.(b) | State the different types of blood groups in human.  | 8       |
| 1.(c) | Describe the consequences of a base substitution mutation with regards to sickle-cell anaemia.   | 8       |
| 1.(d) | Write about the advantages and disadvantages of animal cloning.  | 8       |
| 1.(e) | Write about the causes of mutation and add a note on their role in evolution.  | 8       |
| 2.    | Write in detail about the following :  | 20×2=40 |
| 2.(a) | Enumerate the characteristics, structure and biological functions of ribosomes.  | 20      |
| 2.(b) | Explain in detail about the different stages in meiotic cell division, hypothesis pertaining to chiasma terminalisation and significance of meiosis. | 20      |
| 3.    | Answer the following :   | 8×5=40  |
| 3.(a) | Explain about the Urey-Miller experiment which supports the origin of life on earth.   | 8       |
| 3.(b) | Write a brief note on types of speciation.   | 8       |
| 3.(c) | Explain about the different types of fossils and the process of fossilization.   | 8       |
| 3.(d) | Write about the various factors affecting gene frequency.  | 8       |
| 3.(e) | Explain how human evolution takes place.   | 8       |

- 4.(a) Give an account on the role of International Code of Zoological Nomenclature (ICZN). 20
- 4.(b) What is continental drift? When did it occur and what are its evidences? 20

### SECTION 'B'

5. Write notes on the following : 8×5=40
- 5.(a) Carbohydrate classification and their function. 8
- 5.(b) Enumerate the steps involved in Krebs' cycle. 8
- 5.(c) Oxidative Phosphorylation. 8
- 5.(d) Fat soluble vitamins and their biological role. 8
- 5.(e) Types of immunoglobulins and their functions. 8
6. Give a detailed account on the following : 8×5=40
- 6.(a) What are the various constituents of blood and add a note on their functions. 8
- 6.(b) Write about the Rh factor in man. 8
- 6.(c) Explain the mechanism of coagulation of blood. 8
- 6.(d) What is acid-base balance? Add a note on its biological importance. 8
- 6.(e) Give an account on the mechanism of hormone action. 8
7. Answer the following : 8×5=40
- 7.(a) Explain how gaseous exchange takes place in human being. 8
- 7.(b) Give a detailed account on nutritive requirements. 8
- 7.(c) Enumerate the role of intestinal glands in digestion and absorption. 8
- 7.(d) Give an account on the physiology of vision. 8
- 7.(e) Write about the structure of neuron and add a note on synaptic transmission. 8
8. Answer the following : 8×5=40
- 8.(a) Write an essay on fate map of frog. 8
- 8.(b) What is regeneration? What are the physiological events that occur during regeneration? 8
- 8.(c) Write an essay on placentation in mammals and add a note on the types of placenta. 8
- 8.(d) What is metamorphosis? Explain the mechanism and role of hormones in insect metamorphosis. 8
- 8.(e) Explain about Baer's Law. 8