

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'

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| 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