

2007

ZOOLOGY - I (Optional)

100077

Standard : Degree

Total Marks : 200

Nature : Conventional

Duration : 3 Hours

Note :

- (i) Answers must be written in **English** only.
- (ii) Question No. 1 is **Compulsory**. Of the remaining questions, attempt **any four** selecting one question from **each section**.
- (iii) Figures to the **RIGHT** indicate marks of the respective question.
- (iv) Number of optional questions upto the prescribed number in the order in which they have been solved will only be assessed. Excess answers will not be assessed.
- (v) Credit will be given for orderly, concise and effective writing.
- (vi) Candidate should not write roll number, any name (including their own), signature, address or any indication of their identity anywhere inside the answer book otherwise he/she will be penalised.
- (vii) For each slab of 10, 15 and 20 marks, the examinee is expected to write answers in 125, 175 and 250 words respectively.

1. Answer **any Four** of the following questions (**10 Marks each**) : **40**
 - (a) With the help of diagram describe life cycle of Plasmodium Vivax.
 - (b) Explain different types of epidermal derivatives in mammals.
 - (c) Describe the hormones secreted by adrenal glands and their action on the target cells.
 - (d) Define water pollution and describe type of pollutants and its sources.
 - (e) What are biogeochemical cycles ? Explain Carbon cycle.

SECTION - A

2. Answer the following sub-questions :
 - (a) (i) Write note on modern concept of species. **5**
 - (a) (ii) Distinguish between Protozoa and Metazoa. **5**
 - (b) (i) Describe different type of spicules in Porifera. **5**
 - (b) (ii) What is metagenesis ? Describe in brief the life history of Obelia. **5**

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	Marks
(c) (i) Write note on the septal nephridium in Earthworm.	5
(ii) With the help of diagram describe mouth parts of Cockroach.	5
(d) (i) Write note on torsion in Gastropoda.	5
(ii) Describe water vascular system in Starfish.	5
3. Answer the following sub-questions :	
(a) Write short notes on :	
(i) Allopatric speciation.	5
(ii) Metameric segmentation in Earthworm.	5
(b) Describe :	
(i) Leucon type of canal system in Sycon.	5
(ii) Polymorphism in Hydractina.	5
(c) (i) Describe in brief social life in Honeybee.	5
(ii) Write note on Zoea Larva.	5
(d) Write notes on :	
(i) Ophiopluteus larva.	5
(ii) Respiration in Unio.	5
SECTION - B	
4. Answer the following sub-questions :	
(a) Describe :	
(i) Retrogressive metamorphosis in Urochordata.	5
(ii) Migration of Eelfish.	5
(b) Write notes on :	
(i) Carrying of eggs by males of midwife toad.	5
(ii) Partial neoteny.	5
(c) Describe :	
(i) Adaptive radiation in living ruling reptiles.	5
(ii) Identification of poisonous and non-poisonous snakes.	5
(d) Describe :	
(i) Latitudinal migration in birds.	5
(ii) General characters of Metatheria.	5

5. Answer the following sub-questions :

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| (a) Describe : | |
| (i) Affinities of Balanoglossus with chordates. | 5 |
| (ii) Ampullae of Lorenzini in Elasmobranch fishes. | 5 |
| (b) Describe in brief : | |
| (i) Metamorphosis in Frog. | 5 |
| (ii) Hibernation in Frog. | 5 |
| (c) Write notes on : | |
| (i) Chelone. | 5 |
| (ii) Pythons. | 5 |
| (d) Describe : | |
| (i) Morphological flight adaptations in birds. | 5 |
| (ii) Evolution of brain in vertebrates. | 5 |

SECTION - C

6. Answer the following sub-questions :

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| (a) Describe : | |
| (i) Homeotherms. | 5 |
| (ii) Osmoregulation in fresh water fishes. | 5 |
| (b) (i) Describe in brief the digestion of carbohydrates in mammals. | 5 |
| (ii) Write note on WBCs. | 5 |
| (c) Describe : | |
| (i) The working of eye of mammal. | 5 |
| (ii) Ultrafiltration process in urine formation in man. | 5 |
| (d) Describe : | |
| (i) The mechanism of impulse conduction through synapse. | 5 |
| (ii) The source of energy for muscle contraction. | 5 |

7. Answer the following sub-questions :

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| (a) Describe : | |
| (i) Poikilotherms. | 5 |
| (ii) Osmoregulation in marine water fishes. | 5 |
| (b) Write notes on : | |
| (i) Cardiac cycle. | 5 |
| (ii) Composition of blood. | 5 |

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- (c) Write notes on :
- (i) Formation of uric acid in uricotelic animals. 5
- (ii) Mode of hearing and the functioning of cochlea. 5
- (d) Describe :
- (i) Hormonal control of female reproductive system. 5
- (ii) Chemistry of muscle contraction. 5

SECTION - D

8. Answer the following sub-questions :

- (a) Describe :
- (i) Pond as an ecosystem. 5
- (ii) Energy flow in an ecosystem. 5
- (b) Write notes on :
- (i) Importance of Ozone layer. 5
- (ii) Control and remedial measures of Green house effect. 5
- (c) Write notes on :
- (i) Municipal solid waste disposal. 5
- (ii) Endangered fauna of India. 5
- (d) Write notes on :
- (i) Chemical communication. 5
- (ii) Batesian mimicry. 5

9. Answer the following sub-questions :

- (a) Describe :
- (i) Food chain. 5
- (ii) The effects of light on the animals. 5
- (b) Describe :
- (i) Adaptations in desert animals. 5
- (ii) Sulphur cycle. 5
- (c) (i) Describe the control of water pollution by treatment and management. 5
- (ii) Write a note on Project tiger. 5
- (d) (i) Describe in brief selective learning in animal. 5
- (ii) Write a note on Mullian mimicry. 5