

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) Illustrate your answer with suitable diagrams wherever necessary.
- (vii) 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.
- (viii) 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) Give an illustrated account of different modes of asexual reproduction in Protozoa
 - (b) Detail an account of dentition in Mammals.
 - (c) Describe the hormones secreted by Pituitary gland and their action on the target cells.
 - (d) Define pollution. Discuss the sources and effects of Air pollution.
 - (e) With the help of a diagram explain the Nitrogen cycle in nature.

SECTION-A

2. Answer the following sub-questions :
- (a) Give an illustrated account of:
 - (i) Class: Arachnida. 5
 - (ii) Coelom and coelomic corpuscles in Earthworm. 5

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Marks

- (b) Briefly describe:
- (i) Canal systems in Porifera. 5
- (ii) Polymorphism in coelenterates. 5
- (c) Write notes on:
- (i) Social life in Termites. 5
- (ii) Feeding and digestion in Earthworm. 5
- (d) Briefly explain:
- (i) Respiration in Sepia. 5
- (ii) Mechanism of locomotion in Starfish. 5
3. Answer the following sub-questions :
- (a) Detail an account of:
- (i) Salient features of class: Trematoda. 5
- (ii) Various types of symmetry found in the animals. 5
- (b) Describe:
- (i) Types of coral reefs. 5
- (ii) Spicules in sponges. 5
- (c) Write notes on :
- (i) Metamorphosis among Insects. 5
- (ii) Phyllosoma larva. 5
- (d) Briefly explain:
- (i) Salient features of Monoplacophora. 5
- (ii) Bipinnaria in the Asterozoa. 5

SECTION-B

4. Answer the following sub-questions :
- (a) Briefly explain :
- (i) Structural organization of Balanoglossus. 5
- (ii) Mechanism of respiration in Fishes. 5
- (b) Describe:
- (i) Device of parental care exhibited by Anurans. 5
- (ii) Neoteny in Axolotl larva. 5

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(c) Enumerate the general characters of:	
(i) Chelonia.	5
(ii) Sphenodon.	5
(d) Briefly describe:	
(i) Altitudinal migration in Birds.	5
(ii) Epidermal derivatives in Mammals.	5
5. Answer the following sub-questions:	
(a) Briefly describe:	
(i) Feeding mechanism in Amphioxus.	5
(ii) Lateral line receptors in Fishes.	5
(b) Describe:	
(i) Metamorphosis in Frog.	5
(ii) Aestivation in Amphibians.	5
(c) Describe :	
(i) Poisonous and non-poisonous snakes of India.	5
(ii) Significance of temporal vacuities in classification of Reptiles.	5
(d) Describe :	
(i) General characters of Prototheria.	5
(ii) Anatomical Flight adaptations in Birds.	5

SECTION-C

6. Answer the following sub-questions :	
(a) Describe:	
(i) Osmoregulation in marine fishes.	5
(ii) Homeotherms.	5
(b) Write notes on :	
(i) Internal respiration.	5
(ii) Mammalian erythrocytes.	5

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- (c) Describe :
- (i) The working of ear of mammal. 5
- (ii) Process of selective reabsorption in man. 5
- (d) Describe:
- (i) Neurotransmitters. 5
- (ii) Hormonal control of spermatogenesis. 5
7. Answer the following sub-questions :
- (a) Describe :
- (i) Osmo regulation in terrestrial animals. 5
- (ii) Poikilotherms. 5
- (b) Write notes on:
- (i) Haemoglobin: Respiratory pigment. 5
- (ii) Pacemakers. 5
- (c) Describe:
- (i) The working of eye of mammal. 5
- (ii) Ornithine cycle. 5
- (d) Describe:
- (i) Mechanism of synaptic transmission. 5
- (ii) The roles of tropomyosin and troponin in contraction of muscle. 5

SECTION-D

8. Answer the following sub-questions :
- (a) Describe :
- (i) The role of temperature on animal life. 5
- (ii) Primary consumers. 5
- (b) Write notes on:
- (i) Phosphorus cycle. 5
- (ii) Aquatic adaptations. 5

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- (c) Write notes on:
- (i) Land pollution. 5
 - (ii) The present status of wild life in India. 5
- (d) Write notes on:
- (i) Types of communication in animals. 5
 - (ii) Camouflaging. 5
9. Answer the following sub-questions:
- (a) Describe:
- (i) Decomposers and detritivores. 5
 - (ii) The impact of inter and intraspecific biotic factors on organisms. 5
- (b) Describe :
- (i) Oxygen cycle. 5
 - (ii) Green house effect. 5
- (c) Write notes on:
- (i) Water pollution. 5
 - (ii) Tadoba National Park 5
- (d) Write notes on:
- (i) Biological clock. 5
 - (ii) Mimicry. 5

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