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3 SEM TDC ZOOH (CBCS) C 5

2 0 2 5

(Nov/Dec)

ZOOLOGY

(Core)

Paper : C-5

(Diversity of Chordata)

Full Marks : 53

Pass Marks : 21

Time : 3 hours

*The figures in the margin indicate full marks
for the questions*

1. Fill in the blanks :

1×5=5

- (a) The nerve cord of vertebrates is derived from ____ layer of the three germ layers.
- (b) The excretory system of cephalo-chordates is ____.
- (c) ____ zoogeographical realm includes the Indian subcontinent.

(2)

- (d) Four-chambered heart in class Reptilia is found in ____.
- (e) ____ organ acts as special, super-charged smell sensors in snakes.

2. Write short notes on any *three* of the following : $4 \times 3 = 12$

- (a) General characteristics of Chordata
- (b) Echolocation in bats
- (c) Plate tectonic theory
- (d) Migration in fishes

3. Discuss the Echinoderm theory of origin of chordates. 6

Or

Discuss the phenomenon of osmoregulation in freshwater and marine fishes.

4. Define parental care. Explain various modes of parental care in amphibians. $2+8=10$

Or

What is the larval form of Hemichordata? Explain the structure and developmental stages of this larval form during metamorphosis. $1+2+7=10$

(3)

5. Define retrogressive metamorphosis. Give an account of the changes that occur during retrogressive metamorphosis of Ascidian tadpole larva. $2+8=10$

Or

What are the components of the poison apparatus of snake? Describe the biting mechanism of snakes. $4+6=10$

6. Write the general characteristics and classification of Aves up to order. $3+7=10$

Or

Classify mammals up to order. Discuss the affinities of Prototheria. $4+6=10$

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3 SEM TDC ZOOH (CBCS) C 6

2 0 2 5

(Nov/Dec)

ZOOLOGY

(Core)

Paper : C-6

**(Animal Physiology : Controlling and
Coordinating Systems)**

Full Marks : 53

Pass Marks : 21

Time : 3 hours

*The figures in the margin indicate full marks
for the questions*

1. Fill in the blanks : 1×5=5

- (a) The main bone cell is _____.
- (b) In muscle fibres, the myofibrils are enclosed by _____.
- (c) The junction of two neurons is called _____.
- (d) Estrogen is secreted by _____.
- (e) Any method that prevents pregnancy is called _____.

(2)

2. (a) Distinguish between the following (any three) : $2 \times 3 = 6$

(i) Simple epithelium and Stratified epithelium

(ii) Blood and Lymph

(iii) Myelinated and Non-myelinated nerve fibres

(iv) Steroidal and Non-steroidal hormones

- (b) Write short notes on (any two) : $3 \times 2 = 6$

(i) Placental hormone

(ii) Structure of neuron

(iii) Characteristics of muscle twitch

(iv) Bone growth and resorption

3. Describe the histological structure of muscle with suitable diagram. $6 + 3 = 9$

Or

Write a note on the structure and function of epithelial tissue. $6 + 3 = 9$

4. What are threshold stimulus and resting membrane potential? Describe the mechanism of generation of action potential. $2 + 7 = 9$

(3)

Or

What is synapse? Write a note on synaptic transmission and neuromuscular junction. $1 + 8 = 9$

5. What is puberty? Describe the histology of ovary with suitable diagram. $2 + 7 = 9$

Or

Write a note on the methods of contraception in male and female. 9

6. Write about the signal transduction pathways for steroidal and non-steroidal hormones. 9

Or

Define hormone. Write a note on the classification of hormone. $1 + 8 = 9$

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Total No. of Printed Pages—3

3 SEM TDC ZOOH (CBCS) C 7

2 0 2 5

(Nov/Dec)

ZOOLOGY

(Core)

Paper : C-7

(Fundamentals of Biochemistry)

Full Marks : 53

Pass Marks : 21

Time : 3 hours

*The figures in the margin indicate full marks
for the questions*

1. Fill in the blanks : 1×5=5

- (a) Pentose sugar present in RNA is _____.
- (b) _____ is an amino acid.
- (c) Oxidases are enzymes which _____ electrons.
- (d) Antiparallel four-stranded DNA structures are referred to as _____.
- (e) Presence of _____ carbon atoms allows the formation of isomers.

(2)

2. Distinguish between the following (any two) :

4×2=8

- (a) Simple and Conjugated proteins
- (b) Competitive and Non-competitive inhibitions
- (c) Saturated and Unsaturated fatty acids
- (d) Essential and Non-essential amino acids

3. Write short notes on any two of the following :

4×2=8

- (a) Allosteric enzymes
- (b) Inversion of sucrose
- (c) Properties of amino acids
- (d) Cot curve

4. What are the biological significances of proteins? Describe the different levels of organization in proteins with proper structural representations.

3+7=10

Or

Explain the structure of different types of RNA with suitable diagram and discuss their functions.

5+5=10

(3)

5. "Lipids are heterogenous group of chemical substances." Explain. How does unsaturation affect the physical properties of fatty acids?

6+4=10

Or

What is antigenic determinant? Describe the classes and functions of immunoglobulins.

4+6=10

6. Explain the mechanism of enzyme action. What is K_m value? Explain its significance.

5+3+4=12

Or

What are the factors affecting the rate of enzyme action and how are enzymes classified according to IUB names and rules?

6+6=12
