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2 SEM TDC ZOO M 1 (N/O)

2019

(May)

ZOOLOGY

(Major)

Course : 201

Time : 2 hours

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

(New Course)

(BIOCHEMISTRY)

Full Marks : 48

Pass Marks : 14

1. (a) Fill in the blanks : 1×5=5

(i) On hydrolysis, the high-energy phosphates release a large value of _____.

(ii) The vitamin that plays essential role in normal blood clotting is _____.

- (iii) The non-protein part of an enzyme is known as ____.
- (iv) Folding of the polypeptide chain is a characteristic of ____ level of protein organization.
- (v) The category of enzymes that catalyze breakdown of substrates by involving water molecule is known as ____.

(b) Write short notes on the following (any two) : 4×2=8

- (i) IUB Classification of Enzymes
- (ii) Sources and functions of vitamin C
- (iii) Coenzymes

2. State the second law of thermodynamics. Write with examples how it is applied in biological system. Mention the differences between entropy and free energy. 1+4+2=7

Or

What do you mean by buffer? How do buffers act in a solution? Write briefly about the biological buffers found in our body and mention their roles. 1+2+4=7

3. Why are amino acids called zwitterions? Classify the amino acids on the basis of their chemical nature. 1+6=7

Or

Define fatty acids. State the types of fatty acids. Write briefly about different types of compound lipids with examples. 1+2+4=7

4. Define metabolism. Write the various steps of glycolysis with enzymes and show the net gain of ATP in this process. 1+5+1=7

Or

Describe the electron transport system. Show how ATP is synthesized inside the mitochondria. 4+3=7

5. How do enzymes participate in biochemical reactions? Write briefly about the kinetics and mechanism of enzyme action. 2+5=7

Or

What is meant by enzyme inhibition? Discuss briefly about various types of enzyme inhibition. 1+6=7

6. Write briefly about structure and function of the various forms of RNA. Mention how RNA is different from DNA. 6+1=7

Or

What do you understand by genetic code? Discuss the mechanism of transcription in prokaryotic cell. 2+5=7

(5)

(Old Course)

**(ANIMAL DIVERSITY—II AND
COMPARATIVE ANATOMY)**

Full Marks : 48

Pass Marks : 19

SECTION—A

[Animal Diversity—II (Chordate)]

(Marks : 36)

Answer Question No. 1 and any three
from the rest

1. (a) Fill in the blanks : 1×4=4

(i) Retrogressive metamorphosis is
seen in larval forms of _____.

(ii) The wheel organ is found in _____.

(iii) The teeth of Scoliodon are
modification of _____.

(iv) The aquatic mammals belong to the
order _____.

(Turn Over)

(b) Write short notes on the following : $4 \times 2 = 8$

(i) Structure of gills in fish

(ii) Affinities of sphenodon

2. Mention the remarkable characteristics of Urochordata. Discuss the invertebrate affinities of Cephalochordata. $3 + 5 = 8$

3. What is metamorphosis? How is metamorphosis different from neoteny? Explain the process of metamorphosis in Amphibia. $1 + 2 + 5 = 8$

4. Discuss the biting mechanism of poisonous snakes with suitable diagrams. Mention the differences between poisonous and non-poisonous snakes. $6 + 2 = 8$

5. What is meant by migration? What are the different types of migration seen in birds? Discuss the causes of migration. $1 + 4 + 3 = 8$

6. What do you mean by dental formula? Discuss briefly about the dentition in mammals. $1 + 7 = 8$

(7)

SECTION—B

(Comparative Anatomy)

(Marks : 12)

7. Compare between the integuments of reptiles and birds. Draw suitable diagrams. 3+2=5

Or

Compare between pelvic girdles of Amphibia and reptiles. Draw suitable diagrams. 3+2=5

8. Give a comparative account of aortic arches in reptiles and mammals. 7

Or

Give a comparative account of alimentary canals in reptiles and birds. 7
