

(6 pages)

Reg. No. :

Code No. : 7419

Sub. Code : HZOM 11

M.Sc. (CBCS) DEGREE EXAMINATION,
NOVEMBER 2015.

First Semester

Zoology

BIOLOGICAL CHEMISTRY

(For those who joined in July 2012 onwards)

Time : Three hours

Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

- The number electrons in each orbit can be represented by the formula
(a) $2 \times n^2$ (b) $3 \times n^2$
(c) $4 \times n^2$ (d) $5 \times n^2$
- One of the following is an example for electrovalent bond
(a) CH_4 (b) NaCl
(c) CCl_4 (d) Co_2

- Pick out the homopolysaccharide from the following
(a) Hyaluronic acid (b) Heparin
(c) Starch (d) Both (a) and (b)
- The central metabolic pathway is
(a) Glycolysis (b) Cori-cycle
(c) Krebs-Henstert cycle (d) TCA cycle
- Which one of the following is an aromatic amino acid?
(a) Aspartic acid (b) Phenylalanine
(c) Alanine (d) Cysteine
- Amino acid considered to be glucogenic and ketogenic is
(a) Tyrosine (b) Phenylalanine
(c) Glycine (d) Both (a) and (b)
- Fats and oils are example for
(a) Homo lipid (b) Hetero lipid
(c) Derived lipid (d) All of these
- Which one of the following is an example for neutral lipid?
(a) Triglyceride (b) Glycerol
(c) Fatty acid (d) Both (a) and (b)

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9. Enzymes that catalyze intramolecular arrangements are grouped into

- (a) Reductases (b) Oxidases
(c) Isomerases (d) Ligases

10. Pick out the coenzyme from the following

- (a) FAD (b) LDH
(c) NAD (d) Both (a) and (c)

PART B — (5 × 5 = 25 marks)

Answer ALL questions, choosing either (a) or (b),
each answer should not exceed 250 words.

11. (a) Maintenance of blood pH is as the result of
acid base balance – Justify.

Or

(b) Evaluate the disorders of acid base balance.

12. (a) Describe the structure of disaccharide and add
a note on its biological importances.

Or

(b) Write an account on monosaccharides of
biological importance.

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13. (a) With an example explain deamination and
transamination.

Or

(b) Briefly present the metabolic pathway of
tryptophan.

14. (a) Write down the classification of fatty acid.
Give an example for each.

Or

(b) With an example explain the structure of fatty
acid.

15. (a) Discuss the various factors govern enzyme
activity.

Or

(b) Distinguish proenzyme, enzyme, coenzyme
and isoenzyme with example.

PART C — (5 × 8 = 40 marks)

Answer ALL questions, choosing either (a) or (b),
each answer should not exceed 600 words.

16. (a) State the laws of thermodynamics and
comment on their application in biological
system.

Or

(b) Critically evaluate the different types of
chemical bonds exist in biomolecules.

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17. (a) Integrate the various routes of gluconeogenesis and comment on its significances.

Or

- (b) Describe the TCA cycle.

18. (a) Trace the metabolic pathway of phenyl alanine and – tyrosine. Comment on then clinical significances.

Or

- (b) Classify amino acids on the basis of structure of side chain.

19. (a) With an example you have studied explain β -oxidation of fatty acid with its energetics.

Or

- (b) Evaluate the sequential steps involved in the synthesis of fatty acid.

20. (a) Write an essay on water soluble vitamins and comment on their physiological significances.

Or

- (b) Highlight the metabolic pathway of Haemoglobin.
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