



**Avinashilingam Institute for Home Science and Higher Education for Women**  
(Deemed to be University under Category 'A' by MHRD, Estd. u/s 3 of UGC Act 1956)  
Re-accredited with 'A+' Grade by NAAC. Recognised by UGC Under Section 12B  
Coimbatore - 641 043, Tamil Nadu, India

**Bachelor's Degree Examination – January 2021**  
**V Semester**

**Class : III UG**  
**Major : Zoology**

**Time : 3 Hours**  
**Max. Marks : 100**

**18BZOC14 Biochemistry**

**Part A**

**10 x 1 = 10**

**Choose the Correct Answer**

- Adding electrons to an atom will result in a (an)  
a. Molecule      b. Anion      c. Salt      d. Cation
- Buffers are mixture of  
a. Strong acid and weak base  
b. Strong acid and strong base  
c. Weak acid and their conjugate based  
d. weak base and their conjugate acid
- Which of the following is the simplest form of carbohydrates?  
a. Aldehyde and ketone groups  
b. Carboxyl groups  
c. Alcohol and carboxyl groups  
d. Hydroxyl groups and Hydrogen groups
- Glycogen is converted to monosaccharide units by  
a. Glucokinase      b. Glucose-6-phosphatase  
c. Glycogen phosphorylase      d. glycogen synthase
- Which among the following is a non-essential amino acid?  
a. Lysine      b. Histidine      c. Serine      d. Threonine
- Which of the following acts as a central molecule when transamination and deamination occur simultaneously?  
a. Alpha-ketoglutarate      b. Glutamate      c. Oxaloacetate      d. Cysteine
- Identify the steroid  
a. androgen      b. triacylglycerol      c. lecithin      d. plasmologen
- The oxidation of valeryl CoA by  $\beta$ -oxidation pathway results in the formation of:  
a. propionyl CoA      b. butyryl CoA  
c. myristoyl CoA      d. malonyl CoA
- Abzymes are  
a. Proteins      b. DNAs      c. RNAs      d. Antibodies
- Which type of enzyme inhibition is irreversible?  
a. Non-competitive inhibition      b. Un-competitive inhibition  
c. Competitive inhibition      d. Allosteric inhibition

**Part B**

**5 x 6 = 30**

**Answer ALL questions**

**Each answer should not exceed 400 words or two pages**

- 11.a. Describe the types of chemical bonds.  
(or)  
11.b. Explain the concept of pH.
- 12.a. Classify the carbohydrates.  
(or)  
12.b. Explain the steps involved in glycogenesis.
- 13.a. Write the physical and chemical properties of amino acids.  
(or)  
13.b. Classify the proteins based on the biological function.
- 14.a. Write in detail about the classification of lipids.  
(or)  
14.b. Add a brief account on the structure and functions of phospholipids.
- 15.a. Give a detailed account on general properties of enzymes.  
(or)  
15.b. Narrate the mechanism of enzyme inhibition with one example.

**Part C**

**5 x 12 = 60**

**Answer ALL questions**

**Each answer should not exceed 800 words or four pages**

- 16.a. Give an elaborate account on the general properties of acids and bases.  
(or)  
16.b. Describe in detail about various types of buffers and their importance.
- 17.a. Discuss in detail about the structure and functions of carbohydrates.  
(or)  
17.b. Demonstrate the steps involved in the tricarboxylic acid cycle.
- 18.a. Elaborate the structures of proteins.  
(or)  
18.b. Write the detailed notes on transamination and deamination of aminoacids.
- 19.a. Discuss the structure of fatty acids.  
(or)  
19.b. Discuss about  $\beta$ -oxidation of palmitic acid.
- 20.a. Describe the types of enzymes based on their mechanism of action.  
(or)  
20.b. Delineate the factors affecting the activity of enzymes.

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