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MCH-015

**MASTER OF SCIENCE IN
CHEMISTRY/MASTER OF SCIENCE IN
ANALYTICAL CHEMISTRY
(MSCCHEM/MSCANCHEM)**

Term-End Examination

December, 2024

MCH-015 : BIOLOGY FOR CHEMISTS

Time : 1 Hour

Maximum Marks : 25

Note : Answer *all* questions. Illustrate your answers wherever required.

1. Answer any *two* of the following questions :

$$2\frac{1}{2} \times 2 = 5$$

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- (a) Describe in brief the domains of life giving their differentiating features.
 - (b) How are lysosomes formed in the cell ? State their functions.
 - (c) Define buffers. Describe in brief their significance in the biological systems.
2. Answer any *two* of the following questions :

$$2\frac{1}{2} \times 2 = 5$$

- (a) What are homopolysaccharides ? Name any *two* of them and give the structural characteristics of any *one* of them.
- (b) What is the other name given to derived lipids ? Name the *two* types of them and describe any *one* of them in brief.

- (c) Explain the existence of amino acids in the zwitter ionic form. Write its significance in the living systems.

3. Explain any *two* of the following : $2\frac{1}{2} \times 2 = 5$

- (a) ATP is the molecule of choice for its role as carrier for different life processes.
- (b) 'DNA is the blueprint of life.'
- (c) Homeostasis and homeostatic control system as an important part of human body and physiology.

4. Compare any *two* of the following pairs :

$$2\frac{1}{2} \times 2 = 5$$

- (a) Nucleosides and Nucleotides
- (b) Degradation of purine and Pyrimidine nucleotides

- (c) Conventions in energetics of chemical reactions and the energetics of biochemical reactions

5. Write short notes on any *two* of the following :

$$2\frac{1}{2} \times 2 = 5$$

- (a) Representation of amino acids
- (b) Role of ATP in biochemical energy transformations
- (c) Significance of ketone bodies

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