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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 :

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

(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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