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**NY—154—2023**

**FACULTY OF SCIENCE**

**M.Sc. (First Year) (First Semester) EXAMINATION**

**NOVEMBER/DECEMBER, 2023**

**(New/CBCS Pattern)**

**BIOTECHNOLOGY**

**Paper—BT—III**

**(Biochemistry)**

**(Saturday, 9-12-2023)**

**Time : 10.00 a.m. to 1.00 p.m.**

*Time—3 Hours*

*Maximum Marks—75*

*N.B. :— (i) Attempt all questions.*

*(ii) All questions carry equal marks.*

*(iii) Represent your answers with well labelled diagrams.*

1. Define pH. Explain Henderson-Hasselbalch equation.

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*Or*

Write notes on :

(a) Biological buffers

(b) Laws of Thermodynamics.

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2. Describe in detail structure, occurrence properties and hydrolysis of polysaccharides. 15

*Or*

Describe in detail classification of Lipids.

3. Describe in detail classification of amino acids. 15

*Or*

Write notes on the following :

- (a) peptides  
(b) Secondary structures of proteins.

4. Describe in detail forms of DNA. 15

*Or*

Define vitamins. Describe in detail structure, sources and deficiency disorder of water soluble vitamins.

5. Write short notes on (any *three*) : 3×5=15

- (a) Chemical bonds  
(b) Sucrose  
(c) Enzymes classification  
(d) Clover leaf structure of *t*-RNA  
(e) Hemoglobin structure.

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