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**BR—211—2016**

**FACULTY OF SCIENCE**

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

**NOVEMBER/DECEMBER, 2016**

**(CBCS Pattern)**

**BIOTECHNOLOGY**

**Paper BT-III**

**(Biochemistry)**

**(Monday, 22-11-2016)**

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

*Time—Three Hours*

*Maximum Marks—75*

*N.B. :—* (i) Attempt *All* questions.

(ii) *All* questions carry equal marks.

(iii) Represent your answer with suitable diagram wherever necessary.

1. Describe in detail Henderson-Hasselbach equation. 15

*Or*

(a) Explain types of chemical bonds. 8

(b) Define thermodynamics. Explain concept of free energy. 7

2. Describe classification of carbohydrates with structure and functions. 15

*Or*

(a) Describe classification of lipids. 8

(b) Comment on cholesterol. Explain biological roles of lipid. 7

3. Describe classification of amino acids with their structure. 15

*Or*

(a) Explain structural classification proteins. 8

(b) Define enzyme. Write down characteristics of enzyme. 7

4. Describe physical properties and forms of DNA. 15

*Or*

(a) Explain classification of water soluble vitamins. 8

(b) Comment of collagen triple helix. 7

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5. Write short notes on any *three* :

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- (a) pH
- (b) Triglycerides
- (c) Isoenzymes
- (d) Helical structure of DNA
- (e) Cyanocobalamin.

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