

Seat No. : \_\_\_\_\_

**14F-109**

May-2015

**B.Sc., Sem.-II**

**Core Course 3 : Biochemistry, Paper : 103**

**Biomolecules Advanced**

**Time : 3 Hours]**

**[Max. Marks : 70**

1. (a) Draw the structures : (1) Maltose (2) Sucrose (3) Raffinose **6**  
(b) State four uses of Homopolysaccharide. **4**  
(c) Write a note on Bacterial cell wall. **4**

**OR**

- (a) Draw the structures : (1) Pectin (2) Glycogen. **5**  
(b) List the occurrence and functions of : (1) Chitin (2) Hyaluronic acid (3) Heparin **9**
2. (a) Describe the conjugated proteins with appropriate examples. **7**  
(b) Discuss the Quaternary structure of Proteins along with Hemoglobin as an example. **7**

**OR**

- (a) Define with an example : **4**  
(1) Isoelectric pH.  
(2) Salting in & Salting out of proteins.
- (b) Discuss any **two** : **10**  
(1) Amphoteric nature of Proteins.  
(2) Alpha Helical structure of proteins.  
(3) Precipitation of Proteins by Organic solvents.

3. (a) Discuss the functions of Phospholipids. **8**  
(b) Write the structure of : 1. Ceramide 2. Sphingomyelin 3. Cholesterol. **6**

**OR**

- (a) Write the structure, functions of cholesterol. **9**  
(b) Explain the effect of Phospholipases on Lecithin. **5**
4. (a) Name and give the structure of nitrogen bases found in RAN. **5**  
(b) Write a note on t-RNA. **5**  
(c) Write a note on Rare Bases. **4**

**OR**

- (a) Write the structure and functions of : (1) ATP (2) SAM **6**  
(b) Draw, Label & List the important features of DNA double helix structure. **8**
5. Answer the following : **14**
- (1) What are simple proteins ? Give example. **2**  
(2) Name any two color reactions of Cholesterol. **1**  
(3) When will the protein give Sakaguchi's and Millon's test positive. **1**  
(4) Draw the structure of cGMP and give its function. **2**  
(5) Define Heteropolysacchride with an example. **2**  
(6) Name the bonds present in the primary and secondary structure of protein. **1**  
(7) State two differences between Starch & Glycogen. **2**  
(8) What are Gangliosides ? **1**  
(9) What is a Nucleoside ? Give an example. **2**
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