

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

**XR-120**

**April-2013**

**B.Sc. Sem. II.**

**BIOCHEMISTRY**

**BIC-103, Biomolecules Adv.**

**Time : 3 Hours]**

**[Max. Marks : 70**

- Instruction :**
- (1) All questions are compulsory.
  - (2) All questions carry equal marks, indicated on right side.
  - (3) Draw diagrams wherever necessary.

1. (1) Draw the structures of :
  - (i) Pectin
  - (ii) Cellulose
  - (iii) Sucrose

**6**
- (2) State the functions of Heteropolysaccharides. 

**4**
- (3) Give one source each of Cellobiose, Lactose, Glycogen & Starch. 

**4**

**OR**

- (1) Draw the structures of :
    - (i) Maltose
    - (ii) Glycogen
    - (iii) Raffinose

**6**
  - (2) Write a note on bacterial cell wall. 

**5**
  - (3) State three uses of homopolysaccharide. 

**3**
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2. (1) Write a note on conjugated proteins. 

**7**
  - (2) Discuss the functions of proteins. 

**7**

**OR**

- (1) List out the different steps involved in protein sequencing. Discuss any one of it in detail. 

**6**
- (2) Discuss the helical structure of proteins. 

**5**
- (3) Explain what denaturation of proteins is. 

**3**

3. (1) Write the functions & colour reactions of Cholesterol. **10**  
 (2) Explain the effect of phospholipases on Lecithin. **4**

**OR**

- (1) Explain :  
 (i) Functions of phospholipids.  
 (ii) Cerebrosides. **10**
- (2) Draw the structure of :  
 (i) Cholesterol  
 (ii) Sphingomyelin **4**

4. (1) Draw and List the important features of Watson and Crick model of DNA. **7**  
 (2) What are the differences between a nucleoside & a nucleotide ? **3**  
 (3) Write a note on rare bases. **4**

**OR**

- (1) Name & draw the structures of the nitrogen bases found in RNA. **5**  
 (2) Draw the structures of cAMP and list two of its function. **4**  
 (3) Write a note on the properties of nitrogen bases. **5**

5. Answer in brief : **(14)**
- (1) Give an example of a Metalloprotein. **01**  
 (2) Give one difference between fibrous and globular protein. **01**  
 (3) Draw the structure of a peptide bond. **01**  
 (4) What are Sphingolipids ? Give examples. **02**  
 (5) State any two properties of phospholipids. **02**  
 (6) Give the full form and function of t-RNA and r-RNA. **02**  
 (7) Give one function of GTP and SAM. **02**  
 (8) Name two non-reducing sugars and explain why they are non-reducing. **02**  
 (9) Why Starch is insoluble in water ? **01**