

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

**JD-119**

**January-2016**

**B.Sc., Sem.-I**

**CC-3 – Paper-101 : Biochemistry  
(Biomolecules)**

**Time : 3 Hours]**

**[Max. Marks : 70**

1. (a) Explain the role of mutation in evolution. **7**  
(b) Write a note on Central dogma of life. **7**

**OR**

- (a) Write a brief note on: RNA World. **5**  
(b) Discuss the various applications of biochemistry. **9**
2. (a) Discuss the following colour reactions with sugars : **9**  
(1) Barfoed's reaction  
(2) Dinitrosalicylic acid test  
(3) Anthrone test
- (b) Discuss Phenyl Hydrazine reaction with sugars. **3**  
(c) Differentiate between D and d sugars. **2**

**OR**

- (a) Draw structures : **4**  
(1) D-Galactose  
(2) D-Mannose  
(3) D-Fructose  
(4) L-Glucose
- (b) Discuss the following reactions of sugar : **10**  
(1) Lobry de Bruyn-Von Ekenstein reaction.  
(2) Uronic acid formation  
(3) Step up reaction

3. (a) Write the structure and give one letter abbreviation of : **6**  
Asparagine, Tyrosine, Lysine, Serine, Cystine, Valine

- (b) Discuss any **two** : **8**
- (1) Reaction of amino acids with  $\text{LiAlH}_4$ .
  - (2) Differentiate between Essential and Non-Essential amino acids
  - (3) Rare amino acids with examples.
- OR**
- (a) Discuss any **two** : **8**
- (1) Reaction of Amino Acids with Nitrous Acid
  - (2) Non Protein amino acids
  - (3) Stereoisomerism in amino acids
- (b) Discuss Titration curve of Mono amino mono carboxy amino acid Alanine. **6**
4. (a) Name any one MUFA and write its structure. **3**
- (b) Discuss rancidity of fats. **7**
- (c) Define any two chemical constants & write their significance. **4**
- OR**
- (a) Discuss the importance of Lipids. **8**
- (b) Write :
- (1) Reaction for soap formation
  - (2) Reaction to convert liquid fat to solid fat. **6**
5. Answer Briefly :
- (1) Define Epimer with an example. **2**
  - (2) What are Anomers ? Give an example. **2**
  - (3) List the basic steps used to do a biochemical literature survey. **2**
  - (4) Name an amino acid and a Monocarboxylic Diamino acid. **2**
  - (5) What are standard amino acids ? Give an example. **2**
  - (6) How will you detect the presence of Arginine & Cysteine in a sample ? **1**
  - (7) What are essential fatty acids ? Give an example. **2**
  - (8) What is the importance of reaction of amino acids with Dansyl chloride ? **1**
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