

F.Y.B.Sc. (With Credits)-Regular-Semester 2012 Sem II  
**2SBC-T1-Biochemistry-I (Cell Biology and Biomolecules) Paper-I**

P. Pages : 2

Time : Three Hours



**GUG/W/16/5562**

Max. Marks : 50

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- Notes : 1. All questions are compulsory and carry equal marks.  
2. Draw well labelled diagrams wherever necessary.

1. What are lysosomes and peroxisomes ? Describe their functions. **10**

**OR**

Describe the reactions of glucose and fructose with- **10**

- i)  $\text{NHO}_3$
- ii) Sodium amalgam
- iii) Phenyl hydrazine hydrochloride

2. What are triacylglycerols? **10**

Describe following properties of fats-

- i) Saponification value
- ii) Acid value
- iii) Iodine number

**OR**

What are vitamins ? How vitamins are classified depending upon their solubility. Give **10**  
examples. Describe the functions of vitamin C.

3. a) Briefly describe the structure of Golgi-complex. **2½**

b) What are disaccharides ? Give chemical structure of any two disaccharides. **2½**

c) Describe the hydrolysis reactions of fat. **2½**

d) Give the reaction of amino acid with dansyl chloride. **2½**

**OR**

e) Write a note on nucleolus. **2½**

f) Briefly describe the chemical structure of glycogen. **2½**

g) What are glycerophospholipids ? Write the structure of phosphatidylserine. **2½**

h) Write a note on physical properties of amino acids. **2½**

4. a) Write a note on plant cell vacuoles. **2½**

b) What is chitin ? Give its structure. **2½**

- c) What are essential fatty acids ? Give two example with their structure. 2½
- d) Write the reaction of ninhydrin with amino acids. 2½

**OR**

- e) What are the functions of smooth endoplasmic reticulum ? 2½
- f) What are heteropolysaccharides ? Give their biological significance. 2½
- g) Describe the dehydration reaction of glycerol. 2½
- h) Describe the functions of folic acid. 2½

**5.** Attempt **any ten** of the following.

- a) What is meant by rough endoplasmic reticulum ?
- b) Give the main function of ribosome.
- c) What are the subunits of 70S & 80S ribosomes ?
- d) Why inulin is also called as fructosan ?
- e) What is meant by optical isomerism ?
- f) What are D & L sugars ?
- g) What is meant by unsaturated fatty acid ?
- h) Write the chemical structure of lysolecithin.
- i) Define lipids.
- j) What are acidic and basic amino acids ?
- k) What are essential amino acids ?
- l) Write the chemical structure of methionine.

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