B SC BIOTECHNOLOGY
First Semester
Biochemistry-I
(BBT- 104)

Duration: 3Hrs. **Full Marks: 70**

Part-A (Objective) =20
Part-B (Descriptive) =50

(PART-B: Descriptive)

Duration: 2 hrs. 40 mins. **Marks: 50**

Answer any *four* from *Question no.* 2 to 8
***Question no.* 1 is compulsory.**

1. What are hemiacetal and hemiketal? What is a polysaccharide? Write a note on starch and glycogen. 4+1+5=10

2. What is a peptide bond? Explain briefly the biosynthesis of protein. 2+8=10

3. Explain the sequence of electron transport chain. Also explain how ATPs are synthesised through ATPase. 5+5=10

4. What is glycolysis? Write the different reactions of glycolysis. How many ATPs are released from glycolysis of one molecule of glucose? 1+8+1=10

5. What are fatty acids? What is β-oxidation of fatty acids? Explain the different steps of β-oxidation of fatty acids. 1+2+7=10

6. What is photosynthesis? Explain non-cyclic photophosphorylation. Also explain C4 Pathway. 1+5+4=10

7. What are nucleic acids? Explain Watson and Crick model of DNA. Write briefly about chemistry of nucleotide. 1+5+4=10

8. Explain the biological role of lipids. Write briefly about triacylglycerol and wax. 5+5=10

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REV-00
BBT/65/70

2016/12

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Duration: 20 minutes **Marks – 20**

(PART A - Objective Type)

I. Choose the correct answer: **1×10=10**

1. Zwitterions are exhibited by

a) nucleotides b) amino acids c) fatty acids d) nucleic acids

2. The location of TCA cycle is

a) cytosol b) mitochondria c) chloroplast d) ribosome

3. The electron transport chain is present in

a) plasma membrane b) inner mitochondrial membrane

c) outer mitochondrial membrane d) thylakoid membrane

4. Dark reactions of photosynthesis take place in

a) thylakoid membrane b) grana

c) stroma d) stromal lamelle

5. Lactose is

a) Monosaccharide b) Disaccharide

c) Polysaccharide d) None of these

6. Glycine is

a) Polar amino acid b) non polar amino acid

c) acidic amino acid d) basic amino amino acid

7. In DNA the deoxyribonucleotides are joined by

a) glycosidic linkage b) phosphoester bond

c) phosphodiester bond d) H-bond

8. Double bonds are seen in

a) Saturated fatty acids b) Unsaturated fatty acids

c) Both a and b d) None of these

9. In the carbon skeleton of palmitic acid the number of carbon atom is

a) 18 b) 17 c) 16 d) 20

10. The enzymes of pentose phosphate pathway are present in

a) cytosol b) mitochondria c) nucleus d) both a and b

II. State true or false : **1×10=10**

1. The structure of L-glucose differs from that of L-galactose at C-2. **(T/F)**

2. Primary structure of protein are stabilised by H-bond. **(T/F)**

3. Glycolysis takes place in cytosol. **(T/F)**

4. mRNA helps in activation of amino acid during protein biosynthesis . **(T/F)**

5. β oxidation of fatty acids takes place in mitochondria. **(T/F)**

6. Amylopectin has (β1→4) linkages. **(T/F)**

7. Triacylglycerols are fatty acid esters of amino acids. **(T/F)**

8. Cholesterol is an example of phospholipid. **(T/F)**

9. In a long polypeptide chain, the bond holding two amino acids is glycosidic bond. **(T/F)**

10. C4 pathway occurs in mesophyll cell. **(T/F)**

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