[Time: 3 Hours] **[Marks: 80]**

Please check whether you have got the right question paper.

N.B: 1. All questions are compulsory.

1.	a)	Draw the structure of α - D mannose by using Haworth projection formula	**1**
	b)	Draw the structure of D-xylose by using Fischer projection formula	**1**
	c)	Name proteolytic enzyme required for digesion of protein	**1**
	d)	Explain metabolism with example	**1**
	e)	Enlist fat soluble vitamins	**1**
	f)	Define mutarotation	**1**
	g)	Give the structure of coenzyme of Vitamin B_2	**1**
	h)	Name the pyrimidine nitrogenous bases	**1**
	i)	Write the structure of C_4 epimer of glucose	**1**
	j)	Draw the structure of 18:2($\Delta^{9,12}$)	**1**
	k)	Draw the structure of ATP	**1**
	l)	Deficiency of Vitamin-A leads to	**1**
	m)	Give the name and draw the structure of basic amino acids	**2**
	n)	Differentiate sucrose and maltose	**2**
	o)	Explain the α -helix structure of proteins	**2**
	p)	Enlist essential amino acids	**2**
2.	a)	Explain the primary and tertiary structure of proteins	**3**
	b)	Explain ATP as energy carrier	**3**
	c)	Write a note on Vitamin-B_6 **or** Vitamin-B_7	**3**
	d)	Explain nucleotides	**2**
	e)	Enumerate silent features of digestion of proteins	**1**

3.	a)	Write a note on starch	**3**
	b)	Differentiate DNA and RNA	**3**
	c)	Write a note on Vitamin-C	**3**
	d)	Explain the relationship between standard free energy change and equilibrium constant	**2**
	e)	Comment on conversion of glucose to energy in RBCs	**1**
4.	a)	Classify amino acids based on functional group with examples (No structures required)	**3**
	b)	Write a note on glycolipids or phospholipids	**3**
	c)	Discuss the biochemical role of thiamine **or** nicotinamide	**2**
	d)	Explain melting and annealing of DNA	**2**
	e)	Give example of high energy phosphate bond and explain their role	**2**
5.	a)	Write a note on folic acid or pantothenic acid	**3**
	b)	Discuss monosaccharides in detail	**3**
	c)	Write a note on Vitamin-A **or** Vitamin-D	**3**
	d)	Draw the structure of arachidonic acid	**2**
	e)	Write salient features of lipid digestion	**1**
6.	a)	Write a short note on Vitamin-K **or** Vitamin-E	**3**
	b)	Differentiate between oils and fats	**3**
	c)	Write a note on Double Helix structure of DNA	**3**
	d)	Explain laws of thermodynamics	**2**
	e)	Define Iodine value	**1**
