UNIT-14 :	BIOMO	LECULES
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On	e mark questions:	
1.	What are monosaccharides?	К
2.	What are oligosaccharides ?	К
3.	Is galactose an aldose or ketose sugar ?	U
4.	What are reducing sugars?	К
5.	What is the product obtained when glucose is oxidised by bromine water?	К
6.	Glucose $\xrightarrow{\text{oxidation with nitric acid}} X$. What is X?	К
7.	Identify the monomer for the polysaccharide :	
	$\{ \left(\begin{array}{c} 0 \\ 0 \\ H \\ H \\ 0 \\ H \\ 0 \\ H \\ 0 \\ H \\ 0 \\ 0$	U
7.	How do you account for the absence of free aldehyde group in the pentaacetate	
	of D-glucose?	К
8.	What is an anomeric carbon?	К
9.	Write the Haworth's structure for β -D (–) fructofuranose.	К
10.	What do you mean by glycosidic linkage?	К
11.	During curdling of milk, what happens to sugar present in it?	К
12.	Name the water soluble component of starch.	К
13.	Give the general representation for α -L- amino acid.	К
14.	The solubility of amino acids in water are generally higher than that of the	
	corresponding halo acids. Explain.	U
15.	How many peptide bonds are present in a pentapeptide?	К
16.	Maya is suffering from Pernicious anaemia . Name the vitamin deficient in her.	U
17.	Name the vitamin whose deficiency in our body results in impaired clotting of	
10	Name a hormono, which controls the level of overation of water and self from	К
10.	kidnovs	14
10	Nulleys.	ĸ
19.	fat In which class will you place vitamin D 2	
20	Name the sugar mojety present in DNA molecule	U
20.	What is the difference between a puckesside and a puckestide?	K
21.		U

Tw	o mark questions:	
1.	What are disaccharides? Give an example.	К
2.	What are polysaccharides ? Give an example.	К
3.	What reactions of glucose support to show that :	
	i) it has a carbonyl group ii) it has a chain of six carbon atoms?	К
4.	Mention two reactions and facts that cannot be explained by the open chain	
	structure of glucose.	К
5.	How do the two cyclic hemiacetal forms of glucose differ? What are these two	
	forms called?	К
6.	What are the hydrolytic products of maltose? Why is it a reducing sugar?	К
7.	What is the composition of invert sugar? How is it obtained?	U
8.	Give two differences between amylose and amylopectin units of starch.	U
9.	What is the basic structural difference between starch and cellulose?	U
10	. Write two main functions of carbohydrates in plants.	К
11	. Write the zwitter ion form of $\alpha\text{-amino}$ acid. In this form amino acids are	
	amphoteric. Give reason.	К
12	. Give the name and structure of the simplest $\alpha\text{-}$ amino acid which is optically	
	inactive .	К
13	. Draw the structure of Glycylalanine. Mark the peptide linkage in it.	К
14	. Vitamin C cannot be stored in our body. Why?	U
15	Name the hormone which contains iodine. What is the function of this hormone?	К
16	. What are the common types of secondary structures of proteins?	К
17	. The two strands in DNA are not identical but are complementary. Explain.	К
Th	ree mark questions:	
1.	With respect to the sugar in milk:	
	i) name the sugar ii) name the hydrolytic products of the sugar	
	iii) which carbon atoms are involved in the formation of glycoside bond in it?	U
2.	What does $lpha$, D, (+) in the name $lpha$ – D (+) glucose signify?	U
3.	i) Write the Haworth's structure of D(+) sucrose:	
	ii) Sucrose is a non-reducing sugar. Why?	
	iii) What is the main source of sucrose?	U
4.	From the following polysaccharides : glycogen, cellulose, amylose, answer the	
	followings:	
	i) Which one is a linear polymer of α - glucose ?	

	ii) W	'hich one is a ן	polymer	of β – glucose ?			
	iii) W	'hich one is a p	olymer	present in liver and i	nuscle ?		U
5.	What	is glycogen? H	low is it (different from starch	1?		U
6.	What	type of linkag	es are re	esponsible for the fo	rmation of		
	i) Pr	imary structur	re of pro	teins			
	ii) Cr	oss linking of	polypept	tide chains			
	iii) α·	helix formatio	on?				U
7.	Match	Match the items in A, B and C correctly					
		Α		В	С		
		a) Valine	No	n essential amino ac	id Basic amino a	acid	
		b) Aspartic a	cid Ess	ential amino acid	Neutral amin	o acid	
		c) Lysine	Ess	ential amino acid	Acidic amino	acid	к
8.	What	are essential	and non	-essential amino ac	ids? Is glycine an	essential or non-	
	essen	tial amino acid	?				К
9.	What	are these with	n respect	to proteins			
	(i) Pep	otide linkage (ii	ide linkage (ii) Primary structure (iii) Denaturation.			К	
10.	Explai	n the terms primary and secondary structure of proteins. What is the					
	differe	fference between α -helix and β -pleated sheet structure of proteins?			U		
11.	Differ	entiate betwee	en globu	lar and fibrous prote	eins with one exar	nple for each.	U
12.	What	is a native pro	tein? Ex	plain how it gets der	atured?		U
13.	What	are the forces	that sta	bilises the 2° and 3°	structures of prot	teins?	К
14.	How	v are vitamins classified? Name the vitamin deficiency of which leads to					
	convu	lsions?					К
15.	Why	are vitamin A	A and v	itamin C essential	to us? Mention	one source for	
	vitam	imin C.			K		
16.	Name						
	i) a	water soluble	vitamin.				
	ii) a	fat soluble vita	soluble vitamin.				
	iii) th	e disease caused by deficiency of vitamin D.			К		
17.	Match	ch the items in A, B and C correctly:					
			Α	В	С		
	a) Vitamin A Green vegetables Scurvy						12
		b) Vita	amin C	Carrot	Beri beri		ĸ
		c) Vita	amin B ₁	Citrus fruit	Night blindness		

18. Match the ite	ems in A, B and	C correctly	:	
	Α	В	С	
	a) Glucagon	pancreas	Decreases blood glucose	
	b) Thyroxin	Pancreas	Increases blood glucose	
	c) Insulin	Thyroid	Stimulates metabolism	
19. What are nucleic acids? Mention their two important functions.				
20. Write the important functional differences between DNA and RNA.				
21. Name the products that would be formed when a nucleotide is completely				
hydrolysed?				
22. Name the linl	kage that joins	:		
i) two monosaccharides \qquad ii) two $lpha$ -amino acids \qquad iii) two nucleotides				
23. What information can you get from 1° and 2° structure of DNA? How is the 2°				
structure of D	ONA stabilised	?		
24. Give differences between RNA and DNA with respect to :				
i) sugar moie	ty ii) N-ba	se iii)	structure	