

Reg.No. _____

**Karunya UNIVERSITY**

(Karunya Institute of Technology & Sciences)

(Declared as Deemed-to-be University under Sec.3 of the UGC Act, 1956)

End Semester Examination – Nov/Dec – 2016

Code : 14BT2001
Sub. Name : BASICS OF BIOCHEMISTRY

Semester : 2016-17 ODD
Duration : 3hrs
Max. marks : 100

Q. No.	Questions	Course outcome	Marks
PART-A (40X1=40 MULTIPLE CHOICE QUESTIONS)			
1.	Which among the following is a monosaccharide?	CO-1	
	a. Maltose b. Starch c. Sucrose d. Galactose		(1)
2.	What is the empirical formula of carbohydrate?	CO-1	
	a. (C ₅ H ₂ O) _n b. (CH ₂ O) _n c. (C ₂ H ₂ O) _n d. (CHO) _n		(1)
3.	Find out the sugar alcohol from the given list:	CO-1	
	a. Glyceraldehyde b. Sorbitol c. Ribose d. Erythrose		(1)
4.	Choose the ketose sugar from the given list of sugars:	CO-1	
	a. Glucose b. Maltose c. Erythrulose d. Galactose		(1)
5.	How many chiral carbons are there in Fischer structure of glucose?	CO-1	
	a. One b. Two c. Three d. Four		(1)
6.	Ribose is a:	CO-1	
	a. Disaccharide b. Monosaccharide c. Polysaccharide d. Oligosaccharide		(1)
7.	Sucrose sugar answer for the following test:	CO-1	
	a. Iodine test b. Benedicts test c. Seliwanoff's test d. Barfoed's test		(1)
8.	Give one example for non-reducing sugar from the given list:	CO-1	
	a. Trehalose b. Maltose c. Lactose d. Galactose		(1)
9.	Which among the following is the storage polysaccharide?	CO-1	
	a. Chitin b. Pectin c. Glycogen d. Cellulose		(1)
10.	The fiber conformation is formed by _____.	CO-1	
	a. Amylose b. Amylopectin c. Glycogen d. Cellulose		(1)
11.	Pick up the unsaturated fatty acid from the given list.	CO-1	
	a. Stearic acid b. Acetic acid c. Palmitic acid d. Oleic acid		(1)
12.	Identify the PUFA from the list:	CO-1	
	a. Oleic acid b. Arachidonic acid c. Lauric acid d. Palmitic acid		(1)
13.	Potassium salt of fatty acid is known as _____.	CO-1	
	a. PUFA b. Soap c. Emulsion d. Triglyceride		(1)
14.	Which among the following is the main function of lipids in human body?	CO-1	
	a. Energy b. Genetic material c. Muscle Strength d. Enzymes		(1)
15.	Why do we have more unsaturated lipid in cell membrane?	CO-1	
	a. Solidification b. Freezing c. Fluidity in cold d. Saponification		(1)
16.	Which among the following are the simple lipids	CO-1	
	a. Wax b. Lecithin c. Cholesterol d. Glycolipid		(1)
17.	The lipid used as emulsifier in food industries (ice cream/candy) is _____.	CO-1	
	a. Cephalin b. Lecithin c. Ganglioside d. Cholesterol		(1)
18.	Identify the wax from the following list of compounds:	CO-1	
	a. Tristearin b. Lanolin c. Cephalin d. Lecithin		(1)
19.	The triglyceride with only saturated fatty acid is _____ in nature.	CO-1	
	a. Solid b. Liquid c. Solid and Liquid d. Semi solid		(1)

20.	The process which converts unsaturated fat into saturated or <i>trans</i> -fat is _____.				CO-1	
	a. Halogenation	b. Hydrogenation	c. Emulsification	d. Saponification		(1)
21.	Identify the sulfur containing amino acid:				CO-1	
	a. Proline	b. Alanine	c. Glycine	d. Methionine		(1)
22.	Which is the aromatic amino acid from the list?				CO-1	
	a. Valine	b. Tyrosine	c. Histidine	d. Proline		(1)
23.	Pick up the essential amino acid from the following:				CO-1	
	a. Leucine	b. Asparagine	c. Serine	d. Alanine		(1)
24.	Zwitter ionic amino acid has _____ net charge.				CO-1	
	a. +1	b. Zero	c. -1	d. +2		(1)
25.	Select the significant small peptide hormone from the given molecules:				CO-1	
	a. Titin	b. Cytochrome C	c. Oxytocin	d. Haemoglobin		(1)
26.	The secondary structure seen in silk fibroin is _____.				CO-1	
	a. Linear amino acid	b. α -helix	c. β -sheet	d. β -helix		(1)
27.	Identify the simple protein from the following:				CO-1	
	a. Glycoprotein	b. Lipoprotein	c. Albumin	d. Nucleoprotein		(1)
28.	Pick up the storage protein from the given list:				CO-1	
	a. Tubulin	b. Antibody	c. Ferritin	d. Actin		(1)
29.	At what wavelength the proteins absorb maximum UV light?				CO-1	
	a. 260nm	b. 280nm	c. 300nm	d. 290nm		(1)
30.	Which is a protein in the given molecules?				CO-1	
	a. Choline	b. Cystein	c. Protease	d. Glucose		(1)
31.	How many hydrogen bonds are there between A and T in DNA structure?				CO-2	
	a. One	b. Two	c. Three	d. Four		(1)
32.	The pentose sugar present in RNA is _____.				CO-2	
	a. α -Ribose	b. β -Ribose	c. α -Deoxy Ribose	d. β - Deoxy Ribose		(1)
33.	Nucleotides can also act as _____.				CO-2	
	a. Enzyme	b. Co-Enzyme	c. Hormone	d. Fat		(1)
34.	Chargaff's rule for DNA base composition says _____.				CO-2	
	a. $A + T = A + G$	b. $A + G = T + A$	c. $A + T = G + C$	d. $A + G = T + C$		(1)
35.	How many base pairs are there in Watson and Crick model of DNA structure?				CO-2	
	a. 11	b. 12	c. 13	d. 10		(1)
36.	One of the class of rRNA present in prokaryotes is _____.				CO-2	
	a. 23s	b. 28s	c. 18s	d. 5.8s		(1)
37.	Which is the wavelength at which the nucleic acid absorb maximum UV light?				CO-2	
	a. 280nm	b. 290nm	c. 260nm	d. 270nm		(1)
38.	Vitamin B3 is known as _____.				CO-3	
	a. Thiamin	b. Riboflavin	c. Niacin	d. Biotin		(1)
39.	Which Vitamin maintains the level of calcium and phosphorus?				CO-3	
	a. Vitamin A	b. Vitamin D	c. Vitamin E	d. Vitamin C		(1)
40.	Which of the following mineral is essential to maintain osmotic pressure?				CO-3	
	a. Ca^{2+}	b. Phosphorus	c. Sodium	d. Copper		(1)

PART B(8 X 5 = 40 MARKS) (ANSWER ANY EIGHT)

41.	Give the difference between structural and stereoisomers with one example for each.	CO-1	(5)
42.	How does the disaccharide maltose structure is formed?	CO-1	(5)
43.	Brief on any one homopolysaccharide with structure	CO-1	(5)
44.	Why the phospholipids are amphiphilic in nature?	CO-1	(5)
45.	Write the significance of any 2 phospholipids.	CO-1	(5)
46.	How the triglyceride is formed? Illustrate the reaction.	CO-1	(5)
47.	What are the 2 forms of secondary structure of proteins? Explain it with example.	CO-1	(5)
48.	Comment on the biological significance of different minerals.	CO-3	(5)

49.	List out any five Vitamins with their deficiency symptoms.	CO-3	(5)
50.	Sketch the general structure of nucleotides and detail it.	CO-2	(5)
PART C(2 X 10 = 20 MARKS) (ANSWER ANY TWO)			
51.	Classify monosaccharides with one example for each group with structure.	CO-1	(10)
52.	Describe the properties of triglycerides or fats.	CO-1	(10)
53.	Write all the different functions of proteins.	CO-1	(10)

ALL THE BEST