

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 : 14FP2002
Sub. Name : FOOD CHEMISTRY

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

Q. No.	Questions	Course outcome	Marks
PART-A (40X1=40 MULTIPLE CHOICE QUESTIONS)			
1.	A sugar alcohol is a. mannitol b. trehalose c. xylulose d. arabinose	C01	(1)
2.	Which of the following is a reducing sugar? a. sucrose b. trehalose c. isomaltose d. agar	C01	(1)
3.	Egg is rich in all of the following except a. cholesterol b. saturated fatty acids c. ascorbic acid d. calcium	C01	(1)
4.	An oligosaccharide contains 2- 20 sugar units joined by _____ bond a. covalent b. ionic c. hydrogen d. glycosidic	C01	(1)
5.	A pentose sugar is _____ a. ribulose b. glucose c. fructose d. dihydroxy acetone	C01	(1)
6.	_____ enhances the creaming in unstable emulsion a. coalescence b. ostwald ripening c. sedimentation d. aggregation	C02	(1)
7.	Isomerization of monosaccharides involves both the carbonyl group and the adjacent _____ group a. oxygen b. hydroxyl c. aldehyde d. carbonyl	C01	(1)
8.	Plastic fats of food gels are obtained from cooling of _____ a. triglyceride b. egg yolk c. phospholipid d. cholesterol	C01	(1)
9.	Food stability and safety properties can be predicted more reliably from _____ a. water activity b. relative vapor pressure c. moisture content d. relative humidity	C02	(1)
10.	Hydrolysis of fats by alkalies into fatty acids and glycerol is called _____ a. coagulation b. saponification c. suspension d. colloidal	C01	(1)
11.	The cholesterol molecule is _____ a. benzene derivative b. quinoline derivative c. steroid d. straight chain acid	C01	(1)
12.	A fatty acid which is not synthesized in the body and has to be supplied in the diet is _____ a. palmitic acid b. lauric acid c. linolenic acid d. palmitoleic acid	C01	(1)
13.	All of the following are rich sources of polyunsaturated fatty acids except a. palm oil b. fish oil c. soybean oil d. safflower oil	C01	(1)
14.	Lipids differ in their degree of saturation or unsaturation due to their number of a. amino acids b. double bonds c. saccharide units d. peptides	C01	(1)
15.	Unpleasant odours and taste in a fat (rancidity) can be delayed or prevented by the addition of _____ a. lead b. copper c. tocopherol d. ergosterol	C01	(1)
16.	A lipid is formed by the condensation reactions between	CO1	

	a. carbon & hydrogen	b. fatty acids & alcohol	c. fatty acids & amines	d. fatty acids & amino acid		(1)
17.	Which of the following is a derived lipid?				CO1	
	a. fats	b. oils	c. steroids	d. waxes		(1)
18.	Compounds with carbohydrates along with fatty acids are called _____				CO1	
	a. simple lipid	b. glycolipid	c. waxes	d. phospholipid		(1)
19.	Naturally occurring fats are				CO1	
	a. L type	b. D type	c. An equimolar mixture of L and D types	d. Symmetric		(1)
20.	Greater the number of carbon atom in chain of fatty acid _____				CO1	
	a. The boiling point will be higher	b. The boiling point will be lesser	c. The melting point will be higher	d. The melting point will be lower		(1)
21.	The water binding capacity of most proteins is greater at _____				CO1	
	a. pH 3-4	b. pH 4-6	c. pH 6-8	d. pH 9-10		(1)
22.	Albumins are those that are soluble in water at pH _____				CO1	
	a. 5.6	b. 6.6	c. 7.6	d. 8.6		(1)
23.	When milk is homogenized, the _____ membrane is replaced by a protein film comprised of casein micelles and whey proteins				CO1	
	a. plasma membrane	b. ceruloplasmin	c. lipoprotein	d. micelles		(1)
24.	The foaming property of a protein refers to its ability to form a thin tenacious film at _____ interfaces				CO1	
	a. gas-liquid	b. solid-gas	c. liquid-liquid	d. solid-liquid		(1)
25.	The mechanism of flavor binding to proteins depends upon _____ of the protein sample				CO1	
	a. temperature	b. moisture content	c. amino acid	d. isoelectric pH		(1)
26.	The major storage protein of wheat is _____				CO1	
	a. gluten	b. albumin	c. globulin	d. prolamine		(1)
27.	Redness is due only to _____, the main pigment in meat				CO2	
	a. nitrate	b. oxymyoglobin	c. deoxymyoglobin	d. metmyoglobin		(1)
28.	_____ pectic enzyme is synthesized in microorganism				CO1	
	a. polygalacturonase	b. pectin methylesterase	c. pectic hydroxylase	d. pectate lyase		(1)
29.	_____ enzyme is responsible for off flavor development in peas, green beans, and corn				CO1	
	a. peroxidase	b. cystine oxidase	c. lipoxygenase	d. β -galactosidase		(1)
30.	Name the sulfur containing essential amino acid _____				CO1	
	a. glutamine	b. tyrosine	c. methionine	d. aspartic acid		(1)
31.	In nature milk, fat globules are stabilized by _____				CO2	
	a. mitochondrial membrane	b. lipoprotein membrane	c. casein	d. fatty acids		(1)
32.	Vitamin which helps in antioxidation is				CO1	
	a. Vitamin A	b. Vitamin D	c. Vitamin E	d. Vitamin K		(1)
33.	Hydrogenation of fat is carried out in the presence of gas and _____ as catalyst				CO2	
	a. copper	b. zinc	c. nickel	d. cobalt		(1)
34.	The vitamin folate works together with _____ to produce new red blood cells				CO1	
	a. Vitamin A	b. Vitamin D	c. Vitamin B12	d. Vitamin E		(1)
35.	Biotin functions coenzymatically in _____ and _____ reactions				CO1	
	a. carboxylation	b. carboxylation	c. hydroxylation	d. hydroxylation		(1)

	and transcarboxylation	and hydrogenation	and transcarboxylation	and isomerization		
36.	Carotenoids may contribute significant _____ activity to foods of both plant and animal origin				CO1	
	a. Vitamin A	b. Vitamin B2	c. Vitamin B3	d. Vitamin K		(1)
37.	Which of the following is mismatched?				CO1	
	a. Vitamin A- Xerophthalmia	b. Vitamin D- Rickets	c. Vitamin K- Beriberi	d. Vitamin C- Scurvy		(1)
38.	Which one of the following is correctly matched?				CO1	
	a. Vitamin E - Tocopherol	b. Vitamin D - Riboflavin	c. Vitamin B - Calciferol	d. Vitamin A – Thiamine		(1)
39.	The unsubstituted form of vitamin K is _____				CO1	
	a. menaquinones	b. phyloquinone	c. melanin	d. menadione		(1)
40.	Cholecalciferol forms in human skin upon exposure to sunlight involving photochemical modification of _____				CO1	
	a. 7-dehydroglycerol	b. 7-ethylglycerol	c. 7-dehydrocholesterol	d. 7-methylcholesterol		(1)

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

41.	Explain the structure of water with illustrations	CO1	(5)
42.	What is dispersed system? Discuss the functional properties of gels	CO1	(5)
43.	Describe the properties and types of cellulose	CO1	(5)
44.	Give example of a reducing disaccharide and draw its structure	CO1	(5)
45.	What is inter-esterification? What is its importance in food systems?	CO2	(5)
46.	Outline the classification of protein based on their composition	CO1	(5)
47.	Explain the mechanism of action of antioxidant	CO3	(5)
48.	Discuss the significance of fat hydrogenation	CO2	(5)
49.	Describe the chemistry and stability of vitamin B2	CO1	(5)
50.	List out the deficiencies for fat soluble vitamins in humans	CO1	(5)

PART C(2 X 10 = 20 MARKS) (ANSWER ANY TWO)

51.	With a help of neat flow diagram, discuss in detail on the production of HFCS	CO3	(10)
52.	Describe the functional properties of emulsion and its types of instabilities	CO1	(10)
53.	Draw and explain the enzyme immobilization techniques and their application in food industry	CO2	(10)

ALL THE BEST