

FEDERAL UNIVERSITY OF TECHNOLOGY, OWERRI
SCHOOL OF SCIENCE
DEPARTMENT OF BIOCHEMISTRY

HARMATTAN SEMESTER EXAMINATION, 2008/2009 ACADEMIC SESSION. TIME: 50 MINS.

COURSE CODE: BCH 201 . CHEMISTRY OF CARBOHYDRATES AND LIPIDS

DEPARTMENT OF STUDENT:-----

REGD. NO. OF STUDENT-----

NAME OF STUDENT.-----

Instructions. Answer all the questions in this paper. Tick or Encircle the letter corresponding to the correct answer. Answer YES or NO where applicable.

1. ----- are the most widespread class of compounds occurring in nature. (a) proteins (b) lipids (c) carbohydrates (d) steroids.
2. The molecular formula for sucrose is (a) $C_6H_{12}O_6$ (b) $C_6H_{10}O_5$
(c) $C_{12}H_{24}O_{12}$ (d) $C_{12}H_{22}O_{11}$
3. ----- and ----- are cyanogenic glycosides present in cassava. (a) Linamarin and Lataustralin (b) Linamyryne and lotaustryline (c) Cyanarine and cyanaustraline (d) Limanarine and lotaustraline
4. There are ----- classes of carbohydrates (a) 1 (b) 2 (c) 3 (d) 4.
5. The range of monosaccharide units present oligosaccharide is 2 -----
(a) 7 (b) 8 (c) 9 (d) 10
6. An example of a disaccharide which is a homoglycan is -----
(a) mannose (b) lactose (c) sucrose (d) maltose
7. Deoxyribose differs from ribose because of the absence of oxygen atom at carbon -----
(a) 1 (b) 2 (c) 3 (d) 4
8. An optically active substance is one that rotates the ----- of polarized light. (a) angle
(b) plain (c) plane (d) peak
9. The α - and β - forms of glucose are best described as -----
(a) stereoisomers (b) isomers (c) monomers (d) anomers.
10. ----- is the recommended solvent for crystallized form of β -D- glucose.
(a) glacial acetic acid (b) glacial alkali (c) glacial aseptic acid (d) glacial acid
11. In terms of energy requirement, photosynthesis is an ----- reaction or process (a) endergonic
(b) endothermic (c) exergonic (d) exothermic
12. ----- is a component of DNA (a) D-ribose (b) d-ribose
(c) D- deoxyribose (d) d- deoxyribose
13. The ----- test is a general test for carbohydrates. (a) Molisch (b) Fehling
(c) Benedict (d) none of the above
14. Gum arabic is an example of a ----- (a) monosaccharide (b) oligosaccharide (c) polysaccharide
(d) none of the above.
15. Benedict test for sugars is preferable to Fehling's test because -----
(a) it is more sensitive (b) it is more dependable (c) it is convenient and stable (d) it is more economical.

16. Which of the following is not a steroid ? (a) cholesterol (b) bile acids (c) α -tocopherol (d) testosterone
17. Lipids are ----- (a) hydrophilic (b) hydrophobic (c) can be extracted with polar solvents (d) none of the above.
18. Which of these is true of simple lipids ? (a) they are saponifiable (b) they contain fatty acids (c) they are water soluble (d) they contain mostly carbon to carbon single bonds.
19. Cholesterol is a precursor of ----- (a) bile acid (b) progesterone (c) vitamin D (d) all of the above.
20. Essential fatty acids are important for (a) fluidity of membranes (b) synthesis of eicosanoids (c) synthesis of cholesterol (d) a and b.
21. Complex lipids are saponifiable because they are (a) can react with alkali (b) are soluble in organic solvents (c) are hydrophobic (d) none of the above.
22. Glycerol is the backbone structure of (a) sphingolipids (b) waxes (c) glycolipids (d) none of the above.
23. Fatty acids with odd number of carbon atoms are found mostly in (a) plants (b) terrestrial animals (c) marine animals (d) none of the above.
24. ω 6 fatty acids are found mostly in (a) marine fish (b) plants (c) terrestrial animals (d) animal fat.
25. Phosphoglycerides ----- (a) are saponifiable (b) do not contain phosphate groups (c) are simple lipids (d) are never unsaturated.
26. Which of these is not applicable to vegetable lipids. (a) they are rich in cholesterol (b) they are rich in unsaturated fatty acids (c) they are liquids at 20 °C (d) they are good sources of essential fatty acids.
27. Phospholipids do not include (a) phosphatidyl serine (b) sphingomyelin (c) galactosyldiacylglycerol (d) phosphatidylethanolamine.
28. The importance of lipids does not include (a) storage material in fat depots (b) formation of urea by deamination (c) major energy source for man and other animals. (d) essential structural components of cell membranes.
29. All complex lipids contain as a characteristic feature (a) one or more carbon to carbon double bond (b) one or more fatty acid group (c) one or more glycerol moiety (d) one or more complex sugars.
30. Which of these is not a simple lipid ? (a) retinol (b) prostaglandin (c) α -tocopherol (d) glycolipid
31. Monosaccharides can undergo reduction reaction to form (a) oximes (b) osazones (c) sugar alcohols (d) aldonic acid
32. The disaccharide, sucrose is composed of (a) two glucose residues linked together by glycosidic bond (b) one D-glucose molecule and D-galactose molecule linked by a glycosidic bond (c) one molecule of glucose and one molecule of fructose linked by glycosidic bond. (d) two galactose residues linked together by a glycosidic bond.
33. Which of these is not a storage polysaccharide (a) chitin (b) glycogen (c) dextran (d) starch.
- Tick T for true and False, F.
34. Mucopolysaccharides and proteins form blood group substances.
35. Cellulose is a good example of structural polysaccharide
36. Starch consists of amyloses and amylopectins.
37. ----- and ----- are the trivial names of phosphatidylcholine
- (a) Lecithin and cephalin (b) Lecithyne and Cepophin (c) Lentilin and cerophane
- (d) Lecithin and cephalin.
38. The functions of lipids do not include (a) supply of energy (b) protection of delicate tissue (c) repair of worn out tissues (d) none of the above.
39. Fats are usually insoluble in (a) distilled water (b) primary alcohols (c) ethers (d) all of the above.
40. Progesterone can be biochemically classified as (a) hydroxypolycyclic ketone (b) protein hormone (c) steroid hormone (d) complex ketone.

AIU, VAO, NCA, GNO

