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BIO-202 BIOCHEMISTRY (FINAL TERM)

1. Eicosanoids are derived from _____fatty acids
   a) Omega 3 b) Omega 6 c) Omega 8 D) Omega 3 and 6

2. Eicosanios that cause the inflamaion or called pro inflammatory.
   a) Omega 3 b) Omega 6 c) omega 9 d) All of these

3. What is the correct ratio of omega 3 and 6 in the diet.
   a) 1:3 b) 1:4 c) 1:5 d) 1:8

4. Omega-3 fatty acids such as alpha-linolenic acid and its derivatives has effects on human health is
   a) Inflammatory b)anti inflammatory c) no effects d) all of these

5. Docahexonic Acid (DHA) is selectiviely incorporated into___
   a) Cell membrane b) Retinal membrane C) postsynaptic neuronal membrane d) B and C

6. Omega-3 fatty acids are beneficial particularly for __diseases
   a) Cardiovascular b) Alzheimer's c) Cancer d) All of these

7. Monoenoic Acids (Oleic Acid) are possiblay the most common fatty acids present in
   a) Olive Oil b) Corn c) soy bean d)peanut

topic 114

8. Polyunsaturated fatty acids contain _____Double bonds
   a) Single b) Double c) More than one d) tripple

9. Example of Polyunsaturated fatty acids are ____
   a) Linoleic Acid b) alpha Linolenic Acid c) Arachidonic Acid d) All of these

10. how many double bonds are present in Arachidonic Acid
    a) Single b) Double c)Triple d) Tetrad

11. Arachidonic Acid is synthesized from _____ Acid
    a)Linoleic Acid b) Alpha-Linolenic Acid c) Palmatic Acid d) None of these

12. _____ is the precursor of paracrine hormones called Eicosanoids
    a) Linoleic Acid b) Alpha-Linolenic Acid c) Arachidonic Acid d) All of these

13.Eicosanoids exer complex control over many bodily systems in _____
a) inflammation b)immunity c)messengers d) All of these

Topic 115

14. Palmetoleic Acid belongs to which family?

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a) Omega 3 b) Omega 6 c) Omega 7 d) omega 8

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15. Fatty acids commonly found in body which are
a) Palmitic Acid b) Stearic Acid c) Oleic Acid d) All of these

16. the no of carbon atoms in stearic Acid are
a) 15 b) 16 c)17 d) 18

17. most common saturated fatty acid found in Animals , plants and microorganisms
a) Palmitic Acid b) Stearic Acid c) Oleic Acid d) None of these

18. Excess carbohydrates in the body are converted into
a) Palmitic Acid b) Stearic Acid c) Oleic Acid d) None of these

19. _____is the first fatty acid produced during fatty acid synthesis
a) Palmitic Acid b) Stearic Acid c) Oleic Acid d) None of these

20. stearic acid are most abundant in animal fat up to
a) 25% b) 30% c) 35% d)40%

21. which is the monounsaturated Faty acid (MUFA) found naturally
a) Palmitic Acid b) Stearic Acid c) Oleic Acid d) None of these

22. which fatty acid is highly abundant in membrane lipids
a) Palmitic Acid b) Stearic Acid c) Oleic Acid d) None of these

23. Glycerol and sphingosine are the type of _____ most commonly found in lipids
a) Esters b) Alcohols c)Fatty Acids d) Amides

24. glycerol contains _____Carbon and _____ hydroxyl OH groups
a) 3 and 3 b) 3 and 4 c) 2 and 3 d) 2 and 2

25. _____is synthesized from Dihydroxyaceton phosphate
a) Alcohols b) Fatty Acids c) Glycerol d) sphingosine

26. Dihydroxyaceton phosphate is acted upon by _____ enzymes to form glycerol
a) one enzyme b) two enzymes c) three enzymes d) four enzymes

27. which enzyme remove the phosphate group from glycerol phosphate to become glycerol
a) Glycerol phosphate dehydrogenase b) glycerol kinase
c) phosphatease d) All of these

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28. Glycerol is a precursor for synthesis of _____ and _____ in the liver and adipose tissue
a) Triacylglycerols and phospholipids b) diacylglycerols and glycolipids
c) monoacylglycerols and phospholipids d) tryacylglycerols and glycolipids

29. when the body uses stored fat as a source of energy glycerol and _____ are released into blood stream
a) Amino Acids b) Glucose c) Fatty acids d) Triacylglycerols

30. sphingsine is an _____
a) Poly Alcohol b) Amino Alcohol c) glyco Alcohol d) Non of these

31. sphingosine is synthesized in the body in the form of _____
a) Amide b) Ceramide c) newmide d) glyride

32. serine and palmitoyl CoA condense to form a product ketosphinganine that is _____to sphinganine
a) Oxidised b) Reduced c) Hydrolysed d) Condensed

33. sphingosine is formed via degradation of sphingolipid in the
a) Lysosomes b) Golgyappratus c) Neuclues d) Cytoplasm

34. In Acrolein test we used _____acid for dehydration to detect glycerol
a) Nitric Acid b) Phosphoric Acid c) sulphuric Acid d) Hydrochloric Acid

35. glycerol combines with three molecules of _____ to form glycerol trinitrate
a) Nitric Acid b) Phosphoric Acid c) Sulphuric Acid d) Hydrochloric Acid

36. which enzyme is used to hydrolyzed the Triacylglycerols
a) Protease b) glycerol kinase c) phosphatease d) lipase

37.There are ____ significant advantages to using triacylglycerol as stored fuels.
a) One b) two c) three d) four

38. The carbon atoms of fatty acids are more _____ than those of sugars.
a) Oxidized b) reduced c) condensed d) All of these

39. Triacylglycerol yields more than _____as much energy as the oxidation of carbohydrates.
a) Twice b) thrice c) four times d) 5 times

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40. Triacylglycerol are _____ and therefore_____

a) Hydrophilic – Hydrated b) Hydrophilic –Dehydrated

c) Hydrophobic –Dehydrated d) Hydrophobic –Hydrated

41. the organism that carries fat as fuel doesn't have to carry the extra weight of ___

a) Proteins b) water c) carbohydrates d) none of these

42. One gram of polysaccharide has ___ gram of water

a) One b) Two c) three d) four

43. Moderately obese poeople with _____ kg of triacylglycerols deposited in theri adipocytes could meet their energy needs for months.

a) 5 to 10 kg b) 10 to 15kg c) 15 to 20 kg d) 20 to 25 kg

44. the human body can store less than _____ energy supply in the form of glycogen

a) A day b) 2 days c) 3 Days d) 4 Days

45. In some animals triacylglycerol stored under the skin serve as insulation against _____

a) Low temperature b) High temperature c) Moderate temperature d) All of these

46. Physical properties of Neutral fats are

a) colourless b) odorless c)tasteless d) All of these

47. the specific gravity of all fats is less than

a) one b) two c) three d) Four

48. The emulsification of dietary fats in intestinal canal brought about by

a) Bile pigments b) Bile juice c) Bile salts d) All of these

49. During the hydrolysis of Fats it yields _____

a) fatty acids b) Glycerol c) Fatty acids and glycerol d) cant be hydrolized

50. During the hydrolysis of Triolein is converted into

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a) Palmitic Acid b) Stearic Acid c) Oleic Acid d) None of these

51. hydrolysis of a fat by an _____ is called saponification

a) Acid b) Base c) Alkali d) All of these

52. the alkali salts of the fatty acids which are called

a) soaps b) toothpaste c) Detergents d) All of these

53. which Alkali is used to form sodium plamitate soap formation

a) NaOH b) CaOH c) KOH d) NH4 OH

54. the amount of alkali needed to saponify a given quantity of fat will depend upon the number of _____group present

a) Amino group b) alkyl group c) carboxyl group d) ester group

55. Fats containing _____ chain fatty acids will have _____ COOH groups per gram than long chain fatty acids.

a) Short –more b) long –more c) short – less d) long -less

56. saponification number of butter is

a) 220 to 230 b) 245 to 262 c) 194 to 200 d)210 to 233

57. Additive reactions consist of

a) Hydrogenation b) Halogenation c) A and B d) Decomposition

58. During the hydrogenation of a lipids the melting point_____ and fat becomes more _____ at room temperature.

a) decrease – liquid b) Increase –Solid c) Decrease –Solid d) increase –liquid

59.During the hydrogenation of fatty acids catalyst is used

a) nickel b) copper c) Nickel and copper d) Zinc

60. Margarine manufacturing means.....

a) changing liquid to solid b) Solid to liquid c) Liquid to liquid d) All of these

61. addition of halogens in unsaturated fatty acids is called

a) Hydrogenation b) halogenation c) hydrohalogenation d) All of these

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62.the degree of unsaturation is reflected by

a) Iodine number b) sponification number c) A and B d) Sodium Number

63. Iodine number is defined as the number of grams of iodine absorbed by ____of fat

a) 50gm b) 100gm c) 75gm d) 85gm

64.during the conversation of Linoleic acid at room temperature into Tetraiodostearic acid which catalysts are/ is used

a) Acetic Acid b) Methanol c) Acetic Acid and Methanol d) None of these

65. fats rich in unsaturated fatty acids have _____

a) High Iodine number b) Low iodine number c) Moderate iodine no d) all of these

66. the higher is the iodine number the _____reactive and _____stable

a) More –less b) Less – more c) More –More d) Less –Less

67. Rancidity occurs particularly when expose to

a) Light b) Heat b) Atmospheric Oxygen d) All of these

68. _____fats resist rancidity more than_____ fats that have unsaturated double bonds

a) saturated –unsaturated b) Unsaturated –Saturated c) less saturated- More Unsaturated

69. Rancidity is occurs due to

a) Oxidation b) Hydrolysis c) Hydration d) Oxidation and Hydrolysis

70. oxidation of the fat molecules give rise to some short chains of

a) Aldehydes b) ketones c) dicarboxylic acids d) All of these

71.The Rancidity can be prevented in the food by adding

a) Vitamin E b) Vitamin D c) Vitamin A d) All of these

72. Second type of neutral lipids that are of physiological importance.

a) Glycerol b) alcohol c) waxes d) aldyhides

73. waxes are _____in water and _____in fat

a) Soluble – insoluble b) insoluble –soluble c) soluble-soluble d)insoluble-insoluble

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74. waxes are _____ by lipases

a) Digestible b) indigestible c) semi digestible d) no effect

75. there _____types of waxes

a) One b) two c) Three d) Four

76. True waxes are solid simple lipids containing a

a) Monohydric Alcohol b)Dihydric alcohol c) trihydric alcohol d)polyhydric alcohol

77. Which alcohol compound is found in plant cuticle waxes and in beeswax

a) Myricyl Alohol b) Cetyl Alohol c) Polyhydric Alocohol d) A and B

78. Example of true waxes is/are

a) Bee wax b) spermaceti wax c) Cholesterol d) A and B

79.Bees was is a mixture of waxes its chief constituent is

a) Myricyl and Palmitate b) Myrical and Aceatic Acid c) Palmitate and Oleic Acid

80. sperm whale contains _____ wax in his head

a) 330Kg b) 300Kg c)350Kg d)336kg

81.the wax obtained by Brazilian palm tree is

a) Bees was b)Carnauba wax c)jojoba wax d) All of these

82.waxes used for candles , soaps and cosmetics is

a) Bees was b)Carnauba wax c)jojoba wax d) All of these

83.LDL cholesterol and HDL cholesterol stands for? no options

a) Low density Lipoprotein b) High density lipoprotein

84. which type of cholesterol have been associated with decreased risk for heart diseases

a) LDL cholesterol b) HDL cholesterol c) TAG d) Total cholesterol

85. lipoprotein particles are spherical aggregates with _____lipids at the core and ____protein side chains and lipid head groups at the surface

a) Hydrophobic –Hydrophilic b) Hydrophilic –hydrophobic

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c) Hydrophobic –Hydrophobic d) Hydrophilic –Hydrophilic

86. Lipoproteins function is to keep their components lipids as

a) Soluble b) Insoluble c) Semisoluble d) None of these

87. Different types of lipoproteins are different in

a) Size b) Density c) Site of origin d) All of these

88. The maximum concentration of TAG (Triacylglycerol) present in

a) chylomicrons b)VLDL c) LDL d) HDL

89. the maximum concentration of cholesterol is present in

a) Chylomicron b) LDL c) VLDL d) HDL

90. the Chylomicron remnant is removed from the circulation by the ___

a) Liver b) Kidney c) Intestine d) Intestinal Mucosa

21-06-2017 Topics 133 to 142

91._____are assembled in the liver

a) Chylomicron b) VLDL c) LDL d) HDL

92. LDL contain _____as their major apolipoprotein that carry cholesterol to _____

a) apoB-100 and Extra Hepatic Tissue b) apoB-200 and Liver

c) ApoB-100 and liver c) ApoB-200 and Extra hepatic Tissue

93. _____ can also accumulate in the_____ lining the arteries resulting tin the formation of atherosclerosis.

a) Reduced LDL and Macrophage cells b) Oxidized LDL and Macrophage cells

c) Oxidized HDL and macrophage cells d) Reduced HDL and Macrophage cells

94. which type of lipoproteins originates in the liver and small intestine

a) Chylomicron b) VLDL c) LDL d) HDL

95. which type of lipoprotein take up cholesterol from peripheral tissues and return it to the liver as cholesterol esters

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a) Chylomicron b) VLDL c) LDL d) HDL

96. when cholesterol is taken up by the HDL, it is immediately _____and becomes_____

a) Esterified - Hydrophobic b) Oxidized - Hydrophobic

c) Esterified - Hydrophilic d) Oxidized -Hydrophilic

97. when cholesterol is taken up by the HDL it is called___

a) Nascent HDL b) Mature HDL c) Pre Mature HDL d) All of these

98. which lipoprotein is called good cholesterol carrier

a) Chylomicron b) VLDL c) LDL d) HDL

99. Healthy Fats contain.....

a) Monounsaturated fats b) polyunsaturated fats c) omega-3 polyunsaturated fats d) All of these

100. unhealthy fat contains

a) Trans-fat b) Saturated fat c) increased Cholesterol Content d) All of these

101. elevate serum LDL but not HDL therefore they increase the risk of CHD

a) Trans fat b) Saturated fat c) Incresed Cholesterol Content d)None of these

102. fatty acids of trans configuration in our food come from _____ different sources

a) one b) two c) three d) Four

103. The concentration of IP-TFA in partially hydrogenated fat may be as high as

a) 60% b) 70% c) 80% d) 90%

104. in milk, RP-TFA is _____ of the fat

a) 4-6 % b) 4-7% c) 3-4% d) 6-7%

105. _____ is more harmful than_____ when campared on a gram-togram basis

a) RP-TFA and IP-TFA b) IP-TFA and RP-TFA

106. the deleterious effect of trans fats occur at intakes of _____g/day

a) 3 to 7 b)4 to 7 c)2 to 7 d) 5 to 7

107. saturated fats is associated with _____levels of Total cholesterol and LDL cholesterol

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a) Low b) High c) Medium d) Very low

108. saturated fats are found in

a) Butter and cheeses b) milk and palm oil c) Animal fat and coconut oil d) all of these

109. Among the SFAs stearic acid appears to have _____ effect on LDL-C

a) Negative b) Neutral c)Positive d)Polar

110. Saturated Fatty Acids (SFAs) are considered to Hypercholesterolemic

a) Luaric Acid b) Myristic c) palmitic d) All of these

111. Deitary cholesterol has _____ on plasma cholesterol

a) Little effect b) Hight Effect c) Medium Effect d) Very low effect

112. There are _____ classes of phospholipids

a) one b) two c) three d) Four

113. membrane lipids are _____ i.e one end of the molecule is hydrophobic and the other is hydrophilic

a) Amphoteric b) amphipathic c) amphophatic d) none of these

114.Phospholipids is not synthesized by

a) Liver b) adipose tissues c) mammary glands d) mature erythrocytes

115. Phosphoglyceride is a diacylglycerol with a _____group on the _____carbon of glycerol

a) phosphate – 3 carbon b) Amide – 3 carbon c) sulphate – 3 carbon d) phosphate – 5

116. in general glycerophospholipids contain _____ at Carbon no 1(C-1)

a) Saturated b) Unsaturated c) Phosphate d) All of these

117. the phosphate group on phophatidic acid PA can be esterified to another compound containing _____

a) Amide group b) Alkyl Group c) Hydroxyl group d) Ester group

118. the most abundant phospholipids of the cell membrane is

a) Lecithins b) Phospholipidcholine c) phospholipidaccetaline

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119. the gaseous exchange occurs _____ in lungs

a) Alveoli b) brochioles c) alviolus d) All of these

120.Adenosine 3'-phosphate-5'-phosphosulfate is the sulfate donor for :
A) sulfated proteoglycans B) Conjugate of drugs C) Phosphosulfate D) Both a and b

121.Which of the following methyl group donor:
A) S-adenosylmethionine B) Adenosine c) Phosphate-5 d) All of these

122._____and ___ play key roles in activating or inhibiting proteins:
a) GTP, GMP b) GDP, AMP c) GTP, GDP d) AMP, GMP

123. cAMP and cGMP serve as _____ messengers in signal transduction pathways:
a) 1st b) 2nd c) 3rd d) 4th

124.synthetic purine and pyrimidine analogs contains which group?
a) Halogens b) Thiols c) additional of nitrogen atoms d) All of these

125.Pyrimidine are used for:
a) Chemotherapy b) Treatment of AIDS c) Organ transplantation d) All of these

126.suffix "ine" in bases denotes the presence of _____in the ring.
a) Nitrogen b) Amine c) Hydroxyl d) Both a and b

127.The nitrogen-containing bases belong to____ families of compounds:
a) 2 b) 3 c) 4 d) 5

128.By the attachment of different groups to the____different types of pyrimidine and purine are generated.
a) Rings b) Compound c) Nucleotide d) Both a and b

129.which nucleotide contains AG:
a) DNA b) RNA c) Both d) None of these

130.Adenine when combines with _____the structure is known as Adenosine
a) Hexose b) Pentose c) Tetrose d) All of these

131.Deoxyguanosine refers to which base?
A) Adinine+ pentose b) Guanine+pentose c) Guanine+ribose d) Guanine+sucrose

132.Which of the following is Minor Purine Bases:
a) Inosine b) methyl guanine c) Both a and b d) Guanine

133. Mercaptopurine, Allopurinol & 8-Azaguanine are referred to which type of bases?
a) Natural b) Unnatural c) Doubles d) Both a and b

134.Uric acid is the catabolic end product of _____in human beings:
a) Guanine b) Purine c) thymine d) Cytosine

Topics 153 to 162

1. Prostaglandins are fatty acids containing __atoms, including an internal __

a) 10 C– 5 carbon ring b) 15C – 8 carbon ring c) 20 C – 5 Carbon Ring d) 20 C – 8 carbon ring

2. Prostaglandins have double bond between

a) C13 and C 14 b) C5 and C6 c) C17 and C18 d) All of these

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3. Nomenclature of prostaglandins (PGs) involves assignment of

a) Capital letter b) Numeral subscript c) Greek letter subscript d) All of these

4. Nomenclature of (PGs) the capital letter refers

a) Ring OH group b) Ring Double Bond c) Ring substituents d) All of these

5. Which prostaglandins contain 2 rings

a) PGA b) PGD c) PGI d) All of these

6. The no of unsaturated bonds in Prostaglandins is determined by

a) Capital letter b) Numeral subscript c) Greek letter subscript d) All of these

7. If there are 2 double bonds present in prostaglandins it will belongs to series

a) Series one b) Series two c) Series three d) Series four

8. the Greek letter subscript found only in ___ series it refresh __ group at carbon 9

a) F – OH group b) A – OH group c) F – COOH group d) A – COOH group

9. in the prostaglandins the Hydroxyl group OH primarily exists in __ Position

a) Alpha b) Beta c) Gamma d) Omega

10. Act as substrate for the lipooxygenase

a) Arachidonic Acid b) 20 C Fatty Acids

c) Arachidonic Acid and 20 C Fatty Acids d) Arachidonic Acid and 15 C FAs

11. Products of Lipoxygenase pathway are ___

a) Cyclic b) Linear c) Cyclic or linear d) double ringed

12. nomenclature rules are followed for Leukatrienes and lipoxins starts from

a) from series 1 b) from series 2 c) from series 3 d) All of these

13. ETA , and EPA stands for no options

Eicosa tri enoic Acid Eicosa Pentaenoic Acid

14. Arachidonic acid have___ double bonds

a) one b) two c) three d) four

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15. lipoxygenase enzymes incorporation of _ molecule in arachidonic acid and forms __

a) Oxygen – OOH b) Oxygen – COOH c) Oxygen – OH d) Hydrogen – OH

16. when oxygen is added it isomerizes at ___ away from the hydro-peroxy

a) One carbon b) Two carbon c) Three carbon d) Four carbon

17. addition of oxygen during synthesis of leukatrienes and lipoxins configuration changes to

a) Cis to trans b) Trans to Cis a) Cis to double trans d) Trans to Double Cis

18. during the isomerizaton of double bond becomes ___in Lipoxygenase pathway

a) one step forward b) one step backward c) two step forward c) two step backward

19. The Hydro-Perxy group is

a) Stable b) Unstable c) Very stable d) low stable

20. which of the following molecules act as messenger molecules

a) HETEs b) Archonadic Acid c) Heme d) All of these

21. LTs and LXs are stands for no options

Leukotrienses and Lipoxins

HETEs: Hydroxy-eicosa-tetra-enoic acid HPETES: Hydro-peroxy-eicosa-tetra-enoic acid

22. LTs and LXs have ___ double bonds as compared to Prostaglandins have ___ double bonds

a) 1 to 3 and 3 to 5 b) 3 to 5 and 1 to 3 c) 2 to 5 and 3 to 5 d) 2 to 4 and 2 to 5

23. HPETEs are the precursors of

a) leukotrienes b) lipoxins c) leukotrienes and lipoxins d) HETEs

24. 5-HPETE is converted to

a) LTA4 b) LTA5 c) LTA6 d) LTA7

25. Fucntional leukotrienes are formed from LTA4 examples are

a) LTB4 b) LTC4 c) LTD4 d) A and B

26. Removal of _____ residue from lTC4 forms LTD4

a) Glycine b) Glutamine c) Glutamate d) B and C

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27. Leukotrienes were so named because they were first discovered in

a) Red blood cells b) White blood cells c) Platelets d) All blood cells

28. The lipoxins are formed through the action of__ and __ on Arachidonic Acid

a) 15 and 5 lipoxygenase b) 10 and 5 lipoxygenase

c) 5 and 5 lipoxygenase d) All of these

29. Chemotaxis is migration of __to the tissue site of injury or inflammation

a) RBCs b) WBCs c) Platelets d) All of these

30. Lipoxins induce chemotaxis and stimulate ____ radicals for killing microorganisms

a) Oxide b) Super oxide c) Trioxide d) All of these

31. which of the followings have very short half lives

a) Prostaglandins b) Thromboxanes c) leukatrienes and lipoxins d) All of these

32. Nucleotides are the building blocks of _____ .No options

Ans is Nucleic Acid

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33. Nucleic acids, which include DNA and RNA, are made from monomers known as __

a) Nucleoside b) Nucleotides c) Poly nucleotides d) All of these

34. Protein synthesis dependent on

a) Nucleoside b) Nucleotides c) Poly nucleotides d) All of these

35. Principal donors and acceptors of phosphoryl group in metabolism

a) ATP b) ADP c) AMP d) ATP and ADP

36. in ATP molecules the removal of __ Group release energy

a) Sugar group b) Ribose group c) Phosphate d) All of these

37. Examples of Co- Enzymes are

a) coenzyme A, b) FAD c) NAD^+ and $NADP^+$ d) All of these

1) Ether lipids compounds constitute as much as_____ of the phospholipids of brain and muscle
a) 5% b) 10% c) 15% d) 20%
2) Ether lipids with an unsaturated group (alkenyl) at the 1st position on the glycerol chain are called :

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A) Plasmalogens b) Glycerophospholipids c) (PAF) Platelet-activating factor

3) PAF is synthesized and released by a variety of cell ____:
a) Size b) Types c) Length by numbers d) Both a and b

4) About _____of the heart phospholipids are plasmalogens
a) All
b) Half
c) One fourth
d) Some

5) How many subclasses are There of sphingolipids:
a) 2
b) 3
c) 4
d) 5

6) Sphingoglycolipids molecules contain ____and ____components:
a) Carbohydrate
b) Lipid
c) Both a and b
d) None of these

7) Sphingolipids, like other membrane lipids, are composed of :
a) hydrophobic portion
b) polar head group
c) Plasmalogens
d) Both a and b

8) Sphingomyelins are present in the_____ of animal cells:
a) plasma membranes
b) Nucleus
c) Cytoplasm
d) All body

9) Cerebroside have _ sugar linked to ceramide:
a) Single
b) Double
c) Triple
d) Both a and d

10) Galactosylceramide is a major glycosphingolipid of ____:
a) Nucleus
b) Digestive system
c) Brain
d) Both a and b

11) Globosides are _____:
a) Glycosphingolipids
b) Galactosylceramide
c) Cerebrosides
d) Both a and b

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12) Globosides are highly abundant in
a) RBCs
b) Wbc
c) Platelets
d) All of these

13) Sialic acids are acidic sugars with a___carbon backbone:
a) Six
b) Seven
c) Eight
d) Nine

14) Sialic acid gives gangliosides the _____charge at pH 7
a) Neutral
b) Positive
c) Negative
d) Both b and c

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15) About _____ of brain lipids are gangliosides and were first isolated from the ganglion of brain cells
a) 4%
b) 5%
c) 6%
d) 7%

16) Gangliosides have a significant role in
a) Growth
b) differentiation of tissues
c) carcinogenesis
d) All of these

17) The basis of blood groups depend on expression of different antigens on ____
a) RBCs
b) Wbc
c) Platelets
d) All of these

18) Modification of O antigen results in_____ blood groups respectively:
a) A
b) B
c) AB
d) All of these

19) Sulfatides are found predominantly in ____ ?
a) nerve tissue
b) Kidney
c) Stomach
d) Both a and b

20) Gangliosides have oligosaccharides as their _____head groups:
a) Non_polar
b) Polar
c) Neutral

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d) Both a and b

21) Glyceroglycolipids are the predominant membrane lipids of ?
a) Animals
b) Plants
c) Prokaryots
d) Eukaryotes

22) Galactolipids constitute about_____of plant membrane lipids:
a) 50% to 60%
b) 60% to 70%
c) 70% to 80 %
d) 80% to 90%

23) abundant lipids in the biosphere are?
a) Sulfolipids
b) Galactolipids
c) Glycolipids
d) Glyceroglycolipids

24) Sulfonated glucose is joined to the ___ of diacylglycerol in glycosidic linkage:
a) C2
b) C3
c) C4
d) C5

25) Galactolipids and Sulfolipids are included in?
a) Glyceroglycolipids
b) Glycolipids
c) Glycerolipids
d) None of these

26) O antigen also referred to as ____ antigen:
a) A
b) B
c) C
d) H

27)

1. Nucleotides that includes in pyrimidines are/is

a) Cytosine
b) thymine
c) Uracil
d) All of these

2. Cytosine when combine with pentose it be

a) deoxyctytidine
b) cytidine
c) monoxycytidine
d) A&B

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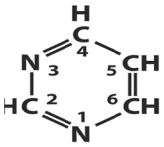
3. Which of the following is 2.4-dioxy-5-Methyl-Pyrimidine?

a) Cytosine

b) Thymine

c) Uracil

d) Adenine

4. 

it is the structure of

a) Pyrimidine b) Purine c) Cytosine d) none of these

5. the difference between thymine and Uracil is

a) Nitrogen group

b) Hydroxyl Group

C) Alcohol Group

d) Methyal Group

6. Which of the following is Minor Pyramidine Base

a) Fluorouracil

b) 6-Aza cytosine

c) Dihydrouridine

d) Non of these

7. DHU , 5FU and AZC stands for .... No options

DHU – Dihydrouridine 5FU – Flouro Uracil AZC- Aza Cytosine

8. Which of the following nucleotides can b degraded in human cells

a) Purine

b) Pyrimidine

c) ATP

d) RNA

9. during the solubility of B-Alanine and B-Amino-iso-butyrate the production is

a) NH3

b) CO2

c) O2

d) A&B

10. sugar that found in nucleic Acids

a) D- Ribose

b) 2-Deoxy D- Ribose

C) L- Ribose

d) A&B

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11. the difference between Dexyribose and Ribose is

a) Addition of Hydrogen at C- 2`

b) Addition of Oxygen at C-2`

c) Addtion of hydroxyl group at C-3`

d) Additoin of Hydroxyl group at C-2`

12. Ribose and Deoxyribose are belongs to

a) B family

b) C Family

d) D family

d) All of these

13. Ribose and Deoxyribose present ias Furanose (ring) in the form of

a) B-Anomer

b) D-Anomer

c) Aldo-Anomer

d) Pento-Anomer

14. the addition of a pentose sugar to a bas produces a

a) Nucleotide

b) Nucleoside

c) Nucleoprotein

d) Nucleosome

15. Nucleotides are

a) Easter of Nucleosides

b) Easter of Methyl

c) Easter of purine

d) Easter of Pyrimidine

16. Which of the following Energy molecules contain more energy

a) AMP

b) ADP

c) ATP

d) GMP

17. Phosphate groups give an over all ____ charge to the nucleotides

a) Positive

b) negative

c) Neutral

d) All of these

18. the nitrogen containing bases are ___ i.e they have alternate ___ bonds

a) Aliphatic – double

b) Aromatic – Tripple

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c) Aromatic – Double

d) Aliphatic – Tripple

19. structure that contain other atoms in addition to carbon in ring structure called

a) Homocyclic

b) Hetrocyclic

c) Isocyclic

d) polycyclic

20. Nucleotides have nature

A) Aromatic

b) Hetrocyclic

c) Aromatic and Hetrocyclic

d) Homocyclic

21. the six atoms rings of Purine and pyrimidines are numbered in

a) Same direction

b) Opposite direction

b) Linear Direction

d) Cyclic Direction

22. which of the nucleoside contain double ring

a) Purine

b) Pyrimidine

c) Cycline

d) Hexocycline

23. Purines or pyrimidines with and _____ are weak bases

a) Amino Group

b) Hydroxyl Group

c) Methyl group

d) easter group

24. the most important functional groups of pyrimidines and purinse are ____ no options

Ans Nitrogens Rings Cybonyl groups Exocylci Amino Group

25. Purine and Pyrimidine bases are ___

a) Hydrophilic

b) Hydrophobic

c) Neutral

d) All of these

26. The conjugated double bonds of purine and pyrimidine derivatives absorb

a) Infra red Light

b) Heat Waves

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c) UV Light d) all of these

27. The mutagen property is utilized in ___ analysis of nucleotides and nucleic Acids

a) Qualitative Analysis b) Quantitative Analysis

c) Qualitative and Quantitative Analysis c) Numeric Analysis

28. purine and pyrimidine bases can exist in ___ form at physiologic pH

a) keto-enol b) amine-imine

c) A&B d) Aminol

29. Smaller pyrimidine molecule has the _____and the larger purine molecule have____

a) Longer name – shorter name b) Shorter name – Larger name

c) Longer name – longer name c) Shorter name – Shorter name

30. Sugars are linked to the heterocycle by a __

a) Glycosidic Bond b) N- Glycosidic Bond

C) B-N-Glycosidic Bond d) All of these

31. B-N-Glycosidic Bond in Pyrimidine forms at ___ and Purine at __

a) N-1 and N-9 b) N-3 and N-9

c) N-1 and N-3 d) At any position

32. glycosidic bond is formed when ___ removed from pentose and__ removed from Base

a) OH and H b) H and OH

c) OH and O c) O and H

33. the difference between glycosidic linkage and O-glycosidic bond is

a) Nitorgen and Oxygen b) Carbon and Nitrogen

c) oxygen and Hydroxyl d) Amino and Carboxyl

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34. The atoms in the rings of the bases are numbered __in pyrimidines & __ in purines

a) 1 to 5 and 1 to 6
b) 1 to 6 and 1 to 9
c) 1 to 9 and 1 to 6
c) 1 to 7 and 1 to 9

35. in the structure of Nucleotides the prime no is given to

a) Nitrogen Base Carbons
b) Sugar carbons
c) Phosphate
d) All of these

36. if we say 5`- carbon in a nucleoside or nucleotide is referred to

a) Nitrogen Base Carbons
b) Sugar carbons
c) Phosphate
d) All of these

37. When two or more nucleotides combine together a__ bond is formed.

a) Glycosidic Bond
b) Peptide Bond
c) phosphodiester Bond
d) Hydrogen Bond

38. phosphodiester bond is formed between ___ group of sugar and __ group of other base

a) 3` OH and 5` PO4
b) 2` OH and 5` PO4
c) 5` OH and 3` PO4
d) 5` OH and 5`PO4

39. The backbones of both DNA and RNA ____

a) Hydrophobic
b) Hydrophilic
c) Neutral
d) None of these

40. The formation of Hydrogen bonding in nucleotides is because

a) OH group of Sugar
b) Amino Group of Bases
c) Phosphate negative charge
d) All of these

41. The phosphate group completely ionized at ___ pH

a) Acidic pH
b) Basic pH

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c) Neutral pH

d) All of these

42. The negative charges on phosphate are generally neutralized by __with positive charges

a) ionic interactions

b) Covalent Interaction

c) Polar interactions

d) Non polar interactions

43. Cyclic GMP serves as second messenger in response to

a) Super oxide

b) Nitric oxide

c) Super Hydroxide

d) All of these

44. DNA is Present is

a) Chromosomes of Eukaryotes

b) Mitochondria

c) chloroplast and plasmids

d) All of these

45. DNA is a polymer of

a) Deoxyribonucleoside monophosphate

b) Deoxyribonucleoside diphosphate

c) Deoxyribonucleoside Triphosphate

d) All of these

46. The protein-DNA complex is present in a non membrane bound region known as

a) Plasmid

b) Nucloside

c) Nucleoid

d) Nucleolus

47. In DNA double helix, the two strands of DNA are held together by.

a) glycosidic linkage

b) Phosphodiester linkage

c) Hydrogen bonding

c) other interactions

48. The complex folding of large chromosomes within eukaryotic chromatin and bacterial nucleoids is generally considered

a) Primary structure

b) Secondary structure

c) tertiary structure

d) All of these

49. The stacking also involves a combination of __ interactions between the bases.

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a) Van der Waals

b) Dipole – Dipole

c) Hydrogen bondings

d) A & B

50. Base stacking helps to __contact of the bases with water

a) Minimize

b) Maximize

c) no effect

d) All of these

51.

1) A key factor affecting the rate of a reaction catalyzed by an enzyme is the concentration of;
   a) Enzyme
   b) substrate,
   c) pH
   d) Temperature
2) because of reversibility of reactions, conversion of product _____substrate:
   a) Forward
   b) Back
   c) Stop at
   d) Both a and b in some cases
3) One simplifying approach in kinetics experiments is to measure the :
   a) Initial rate
   b) designated V0
   c) [S] greater _>concentration of, [E]
   d) All of these.
4) V0 is the _____?
   a) initial velocity
   b) Final velocity
5) Increase in substrate concentration _____V0 ;
   a) Increase
   b) Decrease
   c) Stop
   d) Both b and c
6) When initial velocity (Vo) is plotted against [S] a hyperbolic curve results, which represent the____:
   a) Minimum velocity
   b) Maximum velocity
   c) Substrate concentration
   d) Initial velocity
7) At relatively low concentrations of substrate, V_o _____almost linearly:
   a) Increases
   b) Decreases
   c) Go forward

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d) Go reverse

8) At this point in the reaction, if [S] >> E, all available enzyme is
   a) Unsaturated
   b) Saturated
   c) Polymerase enzyme
   d) Helicase enzyme
9) finite limit of ____is called saturation kinetics
   a) [S]
   b) Vmin
   c) E
   d) Vmax
10) Michaelis constant is represented by?
   a) Mc
   b) Mk
   c) Km
   d) Mhc
11) Low concentration of substrate is needed to half-saturate the enzyme i.e. to reach a velocity that is____?
   a) 1VMax
   b) 1⁄2Vmax
   c) 2Vmax
   d) 2/3Vmax
12) A numerically ___Km reflects a____ affinity of enzyme;
   a) High, high
   b) High, low
   c) Low, low.
   d) Low, high.
13) Km glucose of approximately
   a) 0.5mM
   b) 0.05 mM
   c) 0.005mM
   d) 5mM
14) Write Michaelis-Menten equation, the rate equation with its symbols detail;.....no option
   Ans is
   Vo= vmax[S]/km+[S]
   $V_o = \frac{V_{max}[S]}{K_m + [S]}$ Where;
   - V_o = initial reaction velocity
   - Vmax = maximal velocity
   - Km = Michaelis constant
   - = K1+K2 / K-1
   - [S] = substrate concentration
15) Leonor Michaelis and Maud Menten in_____, proposed a simple model that accounts for most of the features of enzyme-catalyzed reactions:
   a) 1919

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b) 1911
c) 1939
d) 1913

16) What is abbreviation of ES?
a) Enzyme study
b) Enzyme starting
c) Energy substrate
d) Enzymes substrate

1.__ is the most abundant substance in living systems, making up __% or more of the weight of most organisms

a) Water – 80%
b) Protein – 70%
c) Water – 70%
d) Carbohydrate - 70%

2. _____are of crucial importance to the structure and function of biomolecules

a) Hydrogen bonding
b) Polarity
c) Tendency of water to ionize
d) A and C

3. What gives water to its unusal properties like higher MP,BP and Heat of Vaporization

a) Covalent bonding
b) Hydrogen bonding
c) Dipole forces
d) Intermolecular forces

4. The water molecules have ___ partial charges

a) positive
b) Negative
c) One negative and 2 positive
d) All of these

5. Attraction between Oxygen atom of one water molecule and hydrogen of another molecule this bonding is called

a) Covalent bonding
b) Electrostatic forces
c) Hydrogen bonding
d) All of these

6. oxygen atom allows each water molecule to form hydrogen bonds with as many as ____neighboring water molecules

a) One
b) Two
c) Three
d) Four

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7. The degree of ionization of water into H+ and OH- ions is

a) Higher b) Smaller

c) Mediator d) None

8. During ionization of water the hydrogen ions hydrated to

a) Amonium Ion b) Hydronium Ion

c) Hydroxyl Ion c) Hydrogenium Ion

9. The ionization of water can be measure by its

a) Head conductivity b) Hydrogen conductivity

c) protonation d) Electrical Conductivity

10. At 250C only about __out of every 10power 9 molecules in pure water are ionized at any instant

a) one b) Two

c) Three d) Four

11. Write the equilibrium constatn for the reversible ionization of water .... NO option

Keq = $\frac{[H^+][OH^-]}{[H_2O]}$

12. One mole of water is weighs is\\

a) 18g b) 18 amu

c) 21g d) 21 amu

13. The product in water equilibrium is designated as

a) Ke b) Keq

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c) Kw d) keqw

14. The value for Keq, determined by electrical conductivity measurements of pure water, is____at 250C

a) 1.8x 10 power -16 b) 1.9x 10 power +16

c) 1.8x10 power -18 d) 1.9x10power -1

15. When there are exactly equal concentrations of H+ and OH- , as in pure water, the solution is said to be at _

a) Acidic pH b) Basic pH

c) Alakali pH d) Neutral pH

16. pH means

a) Negative logarithm b) Negative logarithm of Hydrogen ions

c) Negative logarithm of HO ions d) positive logarithm of Hdrogen ions

17. For each pH unit less than 7.0, the [H+] is ___tenfold and for each pH unit above 7.0, it is __tenfold

a) increased and decreased b) Decreased and increased

c) less and decreased d) more and increased

18. pH + pOH =_____

a) 11 b) 12 c) 13 d) 14

19. What will be the pH of 0.1 M HCl?

a) 1 b) -1 c) +1 d) 2

20 The stronger the acid, the greater its tendency ionizes that means...

a) to gain electrons b) to gain proton c) to lose its proton d) to gain electrons

21. Which of the following acids are strong acids?

a) sulphuric Acid b) Hydrochloric Acid c) Nitric Acid d) All of these

22. Strong bases are/is

a) NaOH b) CaOH c) NH4OH d) All of these

23. The stronger the tendency to dissociate a proton, the stronger is the acid and the ___ its pKa

a) stronger b) higher c) neutral d) lower

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24. _____ is used to determine the amount of an acid in a given solution

a) Molarity b) pH c) Titraton d) normality

25. A measured volume of the acid is titrated with a solution ___of known concentration

a) weak Base b) Strong Bas c) neutral solution d) All of these

26. The pH of the equimolar solution of acetic acid and acetate is exactly equal to the pKa of acetic acid pKa =_____

a) 4.32 b) 4.75 c) 4.76 d) 9

27. The Henderson Hassebalch HH equation relates

a) pH b) pka c) buffer concentration d) All of these

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