Sports and Exercise Nutrition 5th edition Mcardle Test Bank

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1. The four categories of carbohydrates include all of the following except:
   A) monosaccharides
   B) disaccharides
   C) trisaccharides
   D) oligosaccharides

2. Glucose may be produced by gluconeogenesis, synthesizing it from all of the following except:
   A) pyruvate
   B) fatty acids
   C) glycerol
   D) carbon skeletons of specific amino acids

3. The term complex carbohydrate commonly refers to:
   A) milk sugar
   B) fruit sugar
   C) table sugar
   D) dietary starch

4. All of the following are nutritious dietary carbohydrate sources except:
   A) fruits
   B) grains
   C) vegetables
   D) high-fructose corn syrup

5. The water-insoluble fibers include all of the following except:
   A) pectin
   B) lignin
   C) hemicellulose
   D) cellulose

6. Glycogen reserves readily deplete during the following conditions except:
   A) carbohydrate loading
   B) starvation
   C) prolonged strenuous exercise
   D) low-carbohydrate diet

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7. Glycogen is synthesized from glucose during a process called _____.
   A) gluconeogenesis
   B) glycolysis
   C) glycogenolysis
   D) glucogenesis

8. _____ serves as the major source of carbohydrate energy for active muscles during exercise.
   A) Muscle glycogen
   B) Blood glucose
   C) Glycerol
   D) Fatty acid

9. _____ is a process that provides a rapid extramuscular glucose supply.
   A) Gluconeogenesis
   B) Glycolysis
   C) Glycogenolysis
   D) Glucogenesis

10. Elevated blood glucose levels cause the beta cells of the pancreas to secrete the hormone _____.
   A) glucagon
   B) somatostatin
   C) epinephrine
   D) insulin

11. When blood glucose falls below the normal range, the pancreas' alpha cells immediately secrete the hormone _____.
   A) glucagon
   B) somatostatin
   C) epinephrine
   D) insulin

12. An amino group shifts from a donor amino acid to an acceptor acid and the acceptor becomes a new amino acid in a process called _____.
   A) deamination
   B) glucose-alanine cycle
   C) transamination
   D) Cori cycle synthesis

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13. Amino acid molecules lose their nitrogen (amine group) in the liver via a process called _____.
    A) deamination
    B) glucose-alanine cycle
    C) transamination
    D) crossamination

14. The _____ for protein, vitamins, and minerals represents a standard for nutrient intake expressed as a daily average.
    A) Estimated Safe and Adequate Daily Dietary Intakes (ESADDI)
    B) Recommended Dietary Allowance (RDA)
    C) Dietary Reference Intake (DRI)
    D) Recommended Daily Dietary Intakes (RDDI)

15. The disaccharide sucrose forms from the union of:
    A) glucose and glucose
    B) fructose and galactose
    C) fructose and fructose
    D) glucose and fructose

16. Lipid constitutes the ideal cellular fuel because each molecule carries large quantities of _____.
    A) water
    B) hydrogen
    C) ATP
    D) energy per unit weight

17. The type of fatty acid that contains two or more double bonds along the main carbon chain is called _____.
    A) polyunsaturated
    B) monounsaturated
    C) trans
    D) saturated

18. Blood lipids must bind to _____, or they will not dissolve in the blood plasma.
    A) protein
    B) fatty acids
    C) phosphorous-containing groups
    D) glucose

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19. What type of lipoprotein forms when emulsified lipid droplets leave the small intestine and enter the lymphatic system?
    A) Glycolipids
    B) Chylomicrons
    C) Low-density lipoproteins
    D) Phospholipids

20. The lipoprotein that normally carries between 60% and 80% of the total serum cholesterol and has the greatest affinity for arterial wall cells is called _____.
    A) HDL
    B) LDL
    C) IDL
    D) VLDL

21. One of the important functions of glucose in the body is its ability to be _____.
    A) used directly by the cells for energy
    B) stored as lipoproteins in muscles and the brain
    C) converted to protein for energy storage
    D) absorbed by the large intestine

22. Synthesis of glucose from other nutrients' structural components is called _____.
    A) gluconeogenesis
    B) glycogenolysis
    C) glycolysis
    D) glucogenesis

23. A key point from the 2015 Dietary Guidelines Advisory Committee concluded that drinking a reasonable amount of this beverage is associated with minimal health risk _____.
    A) fruit juice
    B) coffee
    C) beer
    D) liquor

24. Lipid molecules _____.
    A) have a basic formula of $C_6H_{12}O_6$
    B) always contain six fatty acids
    C) occur in plants and animals
    D) are soluble in water

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25. Which of the following is a rich dietary source of saturated fatty acids?
    A) Safflower oil
    B) Sunflower oil
    C) Palm oil
    D) Corn oil

26. Not a benefit of dietary fiber.
    A) Delays gastric emptying
    B) Facilitates red blood synthesis
    C) Interferes with digestive enzymes
    D) Inhibits cholesterol synthesis

27. Four grams of lipid contain approximately _____ kcal.
    A) 8
    B) 16
    C) 32
    D) 36

28. The building blocks of protein are known as _____.
    A) amino acids
    B) glucose molecules
    C) lipids
    D) peptides

29. The RDA represents _____.
    A) the maximum quantity of a nutrient required for good health
    B) a method for evaluating nutrient quality
    C) the average daily nutrient intake level sufficient to meet the nutrient requirement of 97% of healthy individuals in a particular life stage group
    D) the average daily nutrient intake level sufficient to meet the nutrient requirement of 50% of healthy individuals in a particular life stage group

30. A healthy human requires how many essential amino acids?
    A) 4
    B) 6
    C) 8
    D) 10

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31. During prolonged exercise, the alanine-glucose cycle generates between _____ and _____ of the total exercise energy requirement.
    A) 1%, 2%
    B) 6%, 7%
    C) 10%, 15%
    D) 20%, 25%

32. A meta-analysis of research trials indicated that for every 10 mg · dL^{-1} increase in _____, cancer risk declined by 36%.
    A) blood sugar
    B) LDL cholesterol
    C) plasma amino acids
    D) HDL cholesterol

33. Starches with a relatively large amount of amylose _____.
    A) contain a long, straight chain of glucose units
    B) contain a highly branched linkage of glucose units
    C) are digested and absorbed rapidly
    D) are digested rapidly and absorbed slowly

34. A well-nourished 80-kg person stores approximately _____ g of carbohydrates.
    A) 90
    B) 300
    C) 500
    D) 1600

35. The American Heart Association recommends a cholesterol intake of no more than _____ mg daily.
    A) 100
    B) 200
    C) 300
    D) 400

36. Two common forms of plant polysaccharide are _____.
    A) fiber and maltodextrin
    B) oligosaccharides and protease
    C) fiber and lignin
    D) starch and fiber

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37. Glucose may be synthesized from _____.
    A) glycerol in glycogenolysis
    B) glycogen in glycolysis
    C) amino acids in gluconeogenesis
    D) lactic acid in glycolysis

38. When there is greater nitrogen output than intake, the nitrogen balance becomes:
    A) positive
    B) negative
    C) neutral
    D) below normal

39. The term lipid represents a heterogeneous group of compounds including all of the following except:
    A) oils
    B) waxes
    C) fats
    D) meats

40. Cholesterol is a _____.
    A) component of bile
    B) compound that contains nitrogen
    C) component of all hormones
    D) compound that contains fatty acids

41. An example of a mono-, di-, and polysaccharide (in the appropriate order) is _____.
    A) lactose, sucrose, and glycogen
    B) glucose, fructose, and fibrose
    C) glucose, maltose, and cellulose
    D) fructose, starch, and sucrose

42. Lipoproteins _____.
    A) constitute the main form of blood lipid transport
    B) are comprised primarily of unsaturated fatty acids
    C) are either water soluble or fat soluble
    D) are the main form of lipid in the body

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43. Gluconeogenesis takes place primarily in the _____.
    A) spleen
    B) kidneys
    C) liver
    D) small intestine

44. Shifting an amino group from a donor amino acid to a keto acid is called _____.
    A) gluconeogenesis
    B) translocation
    C) transamination
    D) deamination

45. When nitrogen intake equals nitrogen excretion, _____ has been achieved.
    A) negative nitrogen balance
    B) nitrogen balance
    C) isocaloric balance
    D) positive nitrogen balance

46. Dietary fibers that show a cholesterol-lowering effect are _____.
    A) classified as water insoluble
    B) classified as water soluble
    C) found primarily in wheat
    D) contained only in fruits

47. Amino acids that are synthesized by the body are classified as _____.
    A) nonessential
    B) critical
    C) important
    D) essential

48. Consuming excessive carbohydrates can lead to:
    A) kidney failure
    B) obesity
    C) liver damage
    D) gum disease

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49. Consuming a high-fiber diet has been shown to lower occurrence of the following conditions except _____.
    A) type 2 diabetes
    B) migraine headaches
    C) blood cholesterol
    D) systemic inflammation

50. To reduce the risk of cancer, the American Cancer Society suggests that no more than _____ of total calories should come from lipids.
    A) 10%
    B) 20%
    C) 30%
    D) 40%

51. _____ makes margarine solid at room temperature.
    A) Oxidation
    B) Esterification
    C) Hydrogenation
    D) Unsaturation

52. _____ contain(s) the largest reserves of glycogen.
    A) Cardiac tissue
    B) Liver
    C) Muscle
    D) Kidneys

53. Rapidly absorbed forms of carbohydrates impose a high _____ on the body.
    A) rate of glycolysis
    B) glucagon synthesis rate
    C) glycemic load
    D) rate of gluconeogenesis

54. Excessive ketone formation can result in a harmful condition called _____.
    A) ketosis
    B) ketogenic shock
    C) ketolysis
    D) catabolic shock

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55. The most plentiful lipids in the body are _____.
    A) glycolipids
    B) triacylglycerols
    C) monoacylglycerols
    D) chylomicrons

56. _____ is classified as a derived lipid.
    A) Glycerol
    B) Cholesterol
    C) Fatty acid
    D) Phospholipid

57. Consumption of sugary beverages increases the risk of the following diseases except _____.
    A) obesity
    B) heart disease
    C) type 2 diabetes
    D) contact dermatitis

58. An example of a monosaccharide:
    A) sucrose
    B) lactose
    C) glucose
    D) maltose

59. _____ reconverts glycogen to glucose.
    A) Deamination
    B) Gluconeogenesis
    C) Glycogenolysis
    D) Transamination

60. During intense exercise, _____ serve as the primary fuel source.
    A) carbohydrates
    B) lipids
    C) proteins
    D) lipoproteins

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61. Which of the following is also known as the “good” cholesterol?
    A) MDL
    B) VLDL
    C) LDL
    D) HDL

62. Which one of the following criteria is present in metabolic syndrome?
    A) Low body weight
    B) Poor kidney function
    C) Low blood cholesterol
    D) Hypertension

63. Glycogen reserves may be depleted by all of the following except:
    A) starvation
    B) high-carbohydrate diet
    C) reduced energy intake
    D) strenuous exercise

64. The protein RDA for adults is _____.
    A) 2.5 g per kg body mass
    B) 0.5 g per kg body mass
    C) 4 oz. regardless of body mass
    D) 0.8 g per kg body mass

65. Which of the following foods is considered a higher quality protein:
    A) cereals
    B) beans
    C) meat
    D) nuts

66. Scientific evidence indicates that only about _____% of an individual's blood cholesterol level comes from dietary intake. The liver produces the rest of the body's cholesterol.
    A) 5
    B) 10
    C) 15
    D) 20

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67. Frequent and excessive intake of _____ may increase the risk for adult-onset (type 2) diabetes mellitus.
    A) animal protein
    B) polyunsaturated fatty acids
    C) highly refined starch
    D) hydrogenated fatty acids

68. True or false? All nutrients contain carbon except water and vitamins.
    A) True
    B) False

69. True or false? Fructose and lactose are two simple sugars that have the same chemical formula as glucose.
    A) True
    B) False

70. True or false? Fructose is the sweetest of the most common simple sugars.
    A) True
    B) False

71. True or false? Eating a diversity of plant foods (grains, fruits, and vegetables) supplies all of the essential amino acids.
    A) True
    B) False

72. True or false? Simple lipids or "neutral fats" consist primarily of triacylglycerols, the most plentiful lipid in the body.
    A) True
    B) False

73. True or false? Glucose, a hexose sugar, contains five carbon atoms in its molecular structure.
    A) True
    B) False

74. True or false? Galactose is the sweetest monosaccharide.
    A) True
    B) False

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75. True or false? Pescovegetarians are at a lower colorectal cancer risk than strict vegetarians.
    A) True
    B) False

76. True or false? Older adults are typically at risk for the gradual loss of muscle mass, strength, and muscle function, a condition known as sarcopenia.
    A) True
    B) False

77. True or false? Carbohydrates contain more energy per unit weight than lipids.
    A) True
    B) False

78. True or false? If energy intake falls below total energy expended during intense training, even protein intake above recommended values may fail to maintain nitrogen balance.
    A) True
    B) False

79. True or false? Consume more red meat for a more healthful diet.
    A) True
    B) False

80. True or false? Athletes who train heavily generally have greater difficulty obtaining adequate calories on a vegetarian diet compared to a nonvegetarian diet.
    A) True
    B) False

81. True or false? The number of near-vegetarian athletes has increased considerably over the last decade.
    A) True
    B) False

82. True or false? Well-balanced vegetarian diets generally provide abundant carbohydrates.
    A) True
    B) False

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83. True or false? Proteins play a role in regulating the acid-base quality of body fluids.
    A) True
    B) False

84. True or false? In muscle, enzymes facilitate nitrogen removal from certain amino acids and subsequently pass this nitrogen to other compounds in the biochemical reactions of transamination.
    A) True
    B) False

85. True or false? Only animals manufacture proteins that contain essential amino acids.
    A) True
    B) False

86. True or false? The body can obtain more energy from protein than it can from an equal amount of lipids.
    A) True
    B) False

87. True or false? Excessive protein intake can place added strain on liver and kidney function.
    A) True
    B) False

88. True or false? Incomplete proteins are higher quality proteins and contain all essential amino acids.
    A) True
    B) False

89. True or false? Symptoms of hypoglycemia include weakness, hunger, and dizziness.
    A) True
    B) False

90. True or false? Exogenous cholesterol refers to cholesterol produced by the body.
    A) True
    B) False

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91. True or false? The American Heart Association suggests an intake of no more than 500 mg of cholesterol per day.
    A) True
    B) False

92. True or false? Cholesterol synthesis occurs only in animals.
    A) True
    B) False

93. True or false? An amino acid's characteristics are determined by its biologic value.
    A) True
    B) False

94. True or false? Cholesterol synthesized by the body is called endogenous cholesterol.
    A) True
    B) False

95. True or false? Maltose is another term for milk sugar.
    A) True
    B) False

96. True or false? Deamination describes the transfer of an amino group to a non–nitrogen-containing carbon compound.
    A) True
    B) False

97. True or false? The main source of dietary cholesterol is plant food.
    A) True
    B) False

98. True or false? Adequate carbohydrate intake provides a sparing effect on the body's lean tissue.
    A) True
    B) False

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99. True or false? The body cannot synthesize cholesterol.
    A) True
    B) False

100. True or false? Structural proteins of collagen compose the hair, skin, nails, bones, tendons, and ligaments.
    A) True
    B) False

101. True or false? Lipoproteins are primarily made up of unsaturated fatty acids.
    A) True
    B) False

102. True or false? Amylopectin represents a form of lipid in which individual fatty acids link together in highly branched form.
    A) True
    B) False

103. True or false? Most vegetable oils contain relatively large amounts of unsaturated fatty acids.
    A) True
    B) False

104. True or false? Regular fish consumption can help prevent obesity-related chronic diseases such as diabetes and heart disease.
    A) True
    B) False

105. True or false? Saturated fatty acids contain only single bonds between carbon atoms.
    A) True
    B) False

106. True or false? Of the three macronutrients, an amino group occurs only in protein.
    A) True
    B) False

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107. True or false? Lignin is an example of a water-soluble dietary fiber.
    A) True
    B) False

108. True or false? One of the benefits of a high-fiber diet is that these foods typically replace other high-glycemic foods.
    A) True
    B) False

109. True or false? A cis unsaturated fatty acid forms in margarine when one of the hydrogen atoms moves to the opposite side of the double bond.
    A) True
    B) False

110. True or false? On a worldwide basis, proteins represent the most prevalent source of calories.
    A) True
    B) False

111. True or false? Individuals who lack adequate quantities of the enzyme lactase, which splits lactose to glucose and galactose during digestion, have a condition called lactose intolerance.
    A) True
    B) False

112. True or false? The storage polysaccharide found in mammalian muscle and liver is called glycogen.
    A) True
    B) False

113. True or false? Depleting liver and muscle glycogen stimulates glucose synthesis from the structural components of other nutrients, principally amino acids, through gluconeogenic metabolic pathways.
    A) True
    B) False

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114. True or false? The process of hydrolysis changes liquid oils to semisolid compounds.
    A) True
    B) False

115. True or false? Greater nitrogen output compared to nitrogen intake is considered negative nitrogen balance.
    A) True
    B) False

116. True or false? The body cannot synthesize the eight amino acids referred to as essential amino acids.
    A) True
    B) False

117. True or false? Fat stored just below the skin is called subcutaneous fat.
    A) True
    B) False

118. True or false? Simple lipids, or non-neutral fats, constitute the major storage form of fat in adipose cells.
    A) True
    B) False

119. True or false? Lipids that contain one or more fatty acid molecules combined with a phosphorus-containing group and a nitrogenous base are called phospholipids.
    A) True
    B) False

120. True or false? Catabolism refers to tissue-building processes in the body.
    A) True
    B) False

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Answer Key

1. C
2. B
3. D
4. D
5. A
6. A
7. D
8. A
9. C
10. D
11. A
12. C
13. A
14. B
15. D
16. D
17. A
18. A
19. B
20. B
21. A
22. A
23. B
24. C
25. C
26. B
27. D
28. A
29. C
30. C
31. C
32. D
33. A
34. C
35. C
36. D
37. C
38. B
39. D
40. A
41. C
42. A
43. C
44. C

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45. B
46. B
47. A
48. B
49. B
50. B
51. C
52. C
53. C
54. A
55. B
56. B
57. D
58. C
59. C
60. A
61. D
62. D
63. B
64. D
65. C
66. D
67. C
68. B
69. B
70. A
71. A
72. A
73. B
74. B
75. A
76. A
77. B
78. A
79. B
80. A
81. A
82. A
83. A
84. A
85. B
86. B
87. A
88. B
89. A
90. B

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91. B
92. A
93. B
94. A
95. B
96. B
97. B
98. A
99. B
100. A
101. B
102. B
103. A
104. A
105. A
106. A
107. B
108. A
109. B
110. B
111. A
112. A
113. A
114. B
115. A
116. A
117. A
118. B
119. A
120. B

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