ENTRY TEST CHEMISTRY

2017/2018 Academic year

AT MEDICAL FACULTY, TRAKIA UNIVERSITY, STARA ZAGORA

**Mark the correct answer**

1. How many  **ϭ** and **π** bonds are there in the H ̶ C ≡ C ̶ H
2. 3 ϭ and 2 π
3. 3 ϭ and 4 π
4. 4 ϭ and 3 π
5. 2 ϭ and 3 π
6. Which of the statements given concerning chemical bonding is false?
7. Energy is required to break any chemical bond
8. Energy must be released if two atoms are to form a chemical bond
9. A chemical bond occurs only if the potential energy is lowered
10. All chemical reactions require a transfer of electrons in forming new bonds
11. Select the compound with polar covalent bonds between the atoms
12. NaCl
13. K2S
14. SiO2
15. None of the above
16. Select the compound with covalent bonds
17. K2O
18. Fe(OH)2
19. SO3
20. CaCl2
21. What is the oxidation number of iron in the compound whose formula is Fe2O3 ?
22. III
23. IV
24. V
25. VI
26. What is the oxidation number of sulfur in the compound whose formula is H2SO3 ?
27. II
28. III
29. IV
30. VI
31. What is the chemical character of SO3?
32. Acidic
33. Basic
34. Amphoteric
35. Metallic
36. What is the chemical character of Al2O3 ?
37. Basic
38. Amphoteric
39. Metallic
40. Nonmetallic
41. Which of the series below contains only metals ?
42. Na, K, Al
43. Na, S, Al
44. K, S, Ne
45. C, O, S
46. Which of the series below contains only nonmetals ?
47. Na, K, Li
48. Na, P,Al
49. Si, S, Ca
50. C, O, S
51. What is the chemical character of Al(OH)3 ?
52. Acidic
53. Basic
54. Amphoteric
55. Metallic
56. What is the product of reaction Na + H2 →?
57. Base
58. Hydride
59. Salt
60. Acid
61. What are the products of reaction Zn + CuSO4 ?
62. Zinc sulfate and copper
63. Zinc oxide and copper oxide
64. Zinc oxide, copper oxide and sulfur dioxide
65. Zinc oxide, copper oxide and oxygen
66. What is the product of reaction K + Cl2 ?
67. Base
68. Salt
69. Covalent compound
70. Acid
71. Which of the following does NaOH react with
72. H2O
73. CO2
74. CaO
75. Mg(OH)2
76. What is the formula of the compound whose name is aluminum sulfate ?
77. Al2(SO4)3
78. AlSO4
79. Al2(SO3)3
80. FePO4
81. Which statement is correct?
82. Oxidation is loss of electrons and reduction is gain of electrons
83. Oxidation is gain of electrons and reduction is loss of electrons
84. Oxidation is loss of protons and reduction is gain of electrons
85. Oxidation is loss of electrons and reduction is gain of protons
86. Which statement is correct?
87. The oxidizing agent is normally in one of its higher possible oxidation states because it will gain electrons and be reduced
88. The oxidizing agent is normally in one of its higher possible oxidation states because it will losses electrons and be reduced
89. The oxidizing agent is normally in one of its lower possible oxidation states because it will losses electrons and be reduced
90. The oxidizing agent is normally in one of its lower possible oxidation states because it will losses electrons and be oxidized
91. Select one strong acid among the following
92. CH3COOH
93. H2CO3
94. NH4OH
95. None of the above
96. Consider the following equilibrium system

CaCO(s) CaO(s) + CO(g)

Which one of the following changes would cause the above system to shift left?

1. Add more CaO
2. Remove CaCO3
3. Decrease volume
4. Increase surface area of CaO
5. Select the name of the given compound

CH3

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CH3 ̶ CH2 ̶ CH ̶ C ̶ Cl

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Br CH3

1. 1-bromo-2-chloroisobutane
2. 3-bromo-4-chloro-4,4-dimethylbutane
3. 2-bromo-1-chloro-1,1-dimethylbutane
4. 3-bromo-2-chloro-2-methylpentane
5. The correct systematic name of the hydrocarbon with the condensed structural formula is

CH3 CH3

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CH3 ̶ C ̶ CH2 ̶ CH

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CH3 CH3

1. 1,1,3,3-tetramethylbutane
2. 2,2,4-trimethylpentane
3. 2,2,4,4-tetramethylbutane
4. Isooctane
5. The general formula of an alkane is
6. C2nH2n+2
7. CnH2n
8. CnH2n+2
9. CnH2n- 2
10. The substance with formula C6H12 is called
11. Hexane
12. Hexene
13. Hexol
14. Hexenoic acid
15. Compounds with the – OH group attached to a saturated alkane – like carbon are known as
16. Alkohols
17. Phenols
18. Alkyl halides
19. Hydroxyls
20. Acetone is prepared by oxidation of
21. Ethanol
22. Acetaldehyde
23. Propan-1-ol
24. Propan-2-ol
25. Ethanal is prepared by oxidation of
26. Ethanol
27. Acetaldehyde
28. Propan-1-ol
29. Propan-2-ol
30. The systematic name for acetone is
31. Propanone
32. Propanal
33. Propanoic acid
34. Ethandiol
35. This amino acid is called

CH3

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NH2 ̶ CH ̶ COOH

1. Glycine
2. Alanine
3. Leucine
4. Serine
5. What type of covalent bonds link the amino acids in a protein?
6. Peptide bonds
7. Hydrogen bonds
8. Glycosidic bonds
9. Ester bonds
10. The peptide bond is formed by reaction between
11. Two carboxylic groups
12. Hydroxylic group and carboxylic group
13. Amino group and carboxylic group
14. No answer is correct
15. Carbohydrates may contain the functional groups
16. Of an aldehyde
17. Of a ketone
18. Hydroxyl groups
19. All of the above
20. The disaccharide sucrose is composed of the mono saccharides
21. Glucose and glucose
22. Fructose and fructose
23. Glucose and fructose
24. None of the above
25. Which of the following substance is a pentose?
26. Fructose
27. Glucose
28. Sucrose
29. None of the above
30. Which two mono saccharides will be formed by hydrolytic cleavage of sucrose?
31. Glucose and fructose
32. Two molecules of glucose
33. Glucose and galactose
34. Two molecules of fructose