

NATIONAL EDUCATIONAL ASSESMENT AND EXAMINATIONS AGENCY (NEAEA)
ETHIOPIAN UNIVERSITY ENTRANCE EXAMINATION (EUEE)
CHEMISTRY EXAMINATION 2007

BOOKLET CODE: 00

NUMBER OF ITEMS:

SUBJECT CODE: 00

TIME ALLOWED: 00

PHYSICAL CONSTANTS:

Gas constant, $R = 8.314 \text{ J mol}^{-1} \text{ K}^{-1} = 0.0821 \text{ L-atm mol}^{-1} \text{ K}^{-1}$

Avogadro's number = $6.023 \times 10^{23} \text{ mol}^{-1}$

Plank's constant, $h = 6.626 \times 10^{-34} \text{ Js}^{-1}$

Speed of light, $c \approx 3.0 \times 10^8 \text{ ms}^{-1}$

Faraday's constant (F) $\approx 96,500 \text{ Cmol}^{-1}$

SI Units and Conversion Factors

1Å = 10^{-10} m

1L-atm = 101.3J

1. According to valence bond theory. Which orbitals on bromine atoms overlap in the formation of the bond in

Br₂? Not Answered

- A. 3s
- B. 3P
- C. 4s
- D. 4P ✓

2. The type of compound that is most likely to contain a covalent bond is one that is Not Answered

- A. A solid metal
- B. Composed of only non-metals ✓
- C. Composed of a metal from the far left and a non-metal from far right of the periodic table
- D. Held together by the electrostatic forces between oppositely charged ions.

3. The first step of the scientific method involves Not Answered

- A. Forming a hypothesis
- B. Making observations. ✓
- C. Performing an experiment.
- D. Predicting the result of an experiment

4. The process of solute particles being surrounded by solvent particles is known as Not Answered

- A. Saturation
- B. Agglomeration
- C. Solvation ✓
- D. Dehydration

5. Which one of the following represents an acceptable possible set of quantum numbers (in the order n, l, m_l, m_s) for an electron in an atom? Not Answered

- A. 2, 1, 0, 0
- B. 2, 0, 2, +1/2
- C. 2, 1, -1, 1/2 ✓
- D. 2, 0, 1, -1/2

6. Of the three types of radioactivity characterized by Rutherford, which of the following are particles?

Not Answered

- A. γ - rays
- B. β - rays
- C. α - rays and β - rays ✓
- D. α - rays, β - rays, and γ - rays

7. Which kind of energy is converted in a galvanic cell? Not Answered

- A. Chemical energy is converted into electrical energy. ✓
- B. Chemical energy is converted to heat.
- C. Chemical energy is obtained from heat.
- D. Electrical energy is converted into chemical energy.

8. The conversion of nitrogen gas to nitrates by bacteria is called Not Answered

- A. Nitrification
- B. Nitrogen fixation ✓
- C. Excretion
- D. Denitrification

9. According to the Arrhenius concept, an acid is a substance that Not Answered

- A. Is capable of donating one or more H^+ to any solvent.
- B. Causes an increase in the concentration of H^+ in aqueous solutions. ✓
- C. Can accept a pair of electrons to form a coordinate covalent bond.
- D. Reacts with the solvent to form the cation formed by auto ionization of that solvent.

10. A system which can exchange both matter and energy with its surroundings is said to be a/an

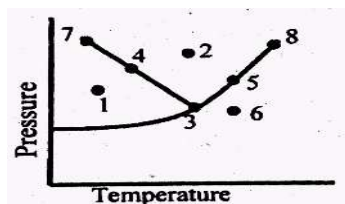
Not Answered

- A. Isolated system
- B. Open system ✓

- C. Ideal system
- D. Closed system

11. At which point can only the solid and liquid phases coexist in the phase diagram of water given below?

Not Answered



- A. 3
- B. 4 ✓
- C. 5
- D. 8

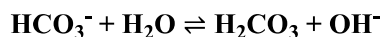
12. What type of solute-solvent interaction should be the most important in a solution of iodine in carbon tetrachloride? Not Answered

- A. London forces ✓
- B. Ionic bonding
- C. Ion-dipole forces
- D. Dipole-dipole forces

13. The distance between two carbon atoms in a diamond is 154 pm. What is the distance between the carbon atoms in millimetres? Not Answered

- A. 7.7×10^{-5}
- B. 7.7×10^{-7}
- C. 1.54×10^{-7} ✓
- D. 1.54×10^{-9}

14. For the acid-base equilibrium.



The Bronsted-Lowry acids are Not Answered

- A. H_2O and OH^-
- B. HCO_3^- and OH^-
- C. H_2O and H_2CO_3 ✓
- D. HCO_3^- and H_2CO_3

15. How many sigma and Pi bonds are present in the following molecule?



- A. 8σ bonds and 1π bond
- B. 8σ bonds and 2π bonds
- C. 10σ bonds and 2π bond
- D. 11σ bonds and 1π bond ✓

16. How many orbital are there in an atom with $n = 4$? Not Answered

- A. 2
- B. 8
- C. 16 ✓
- D. 25

17. The most abundant metal on the surface of the earth is Not Answered

- A. Fe
- B. Al ✓
- C. Ca
- D. Na

18. Which of the following is correct? Not Answered

- A. $1\text{L} = 1\text{dm}^3$ ✓
- B. $1\text{L} = 10\text{dm}^3$
- C. $10\text{L} = 1\text{cm}^3$
- D. $1\text{L} = 0.1\text{dm}^3$

19. The enthalpy of combustion of solid carbon to form carbon dioxide is 393.5kJ/mol carbon and the enthalpy of combustion of carbon monoxide to form carbon dioxide is -283.3kJ/mol CO. what will be the enthalpy change. ΔH for the reaction?

$2\text{C}(\text{s}) + \text{O}_2(\text{g}) \rightarrow 2\text{CO}(\text{g})$ Not Answered

- A. -503.7kJ/mol ✓
- B. -220.8kJ/mol
- C. $+172.9\text{kJ/mol}$
- D. $+1354.0\text{kJ/mol}$

20. The decreasing order of electrochemical characteristics of some metals is given as: $\text{Mg} > \text{Al} > \text{Zn} > \text{Cu} > \text{Ag}$. What will happen if a copper spoon is used to stir a solution of aluminium nitrate $(\text{Al}(\text{NO}_3)_3)$?

Not Answered

- A. There is no reaction ✓
- B. The solution becomes blue
- C. The spoon will get coated with aluminium
- D. An alloy of copper and aluminium is formed.

21. What hybridization change does the carbon atom undergo in the combustion of methane?

$\text{CH}_4(\text{g}) + 2\text{O}_2(\text{g}) \rightarrow \text{CO}_2(\text{g}) + 2\text{H}_2\text{O}(\text{g})$ Not Answered

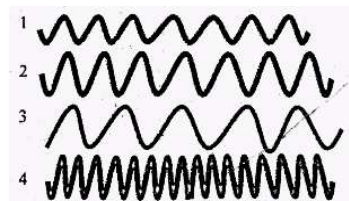
- A. $\text{Sp} \rightarrow ?\text{sp}^2$
- B. $\text{Sp}^2 \rightarrow \text{sp}^3$
- C. $\text{Sp}^3 \rightarrow \text{sp}$ ✓
- D. $\text{Sp}^2 \rightarrow \text{sp}$

22. Which of the following ionic compounds has the greatest lattice energy? Not Answered

- A. LiF ✓
 B. LiCl
 C. LiBr
 D. LiI

23. Consider the three electromagnetic waves shown below

Which of the electromagnetic waves has the highest frequency? Not Answered



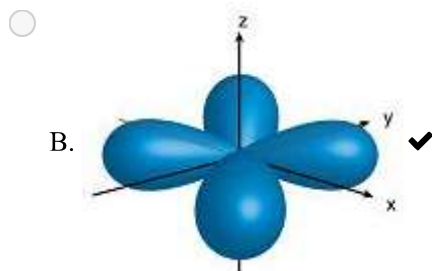
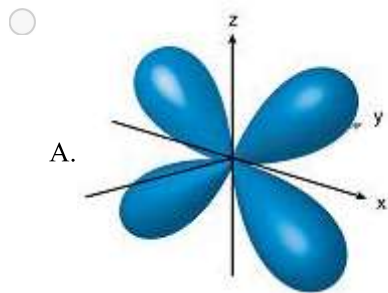
- A. 1
 B. 2
 C. 3
 D. 4 ✓

24. Considering the reaction below, in which of the following will the effect of concentration and temperature simultaneously cause an increase in the rate at which products are formed?

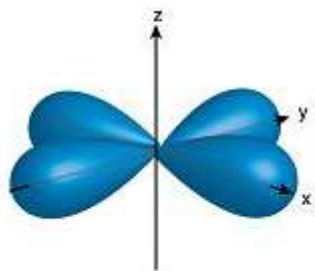


- A. Decrease [HCl] and decrease temperature.
 B. Increase [HCl] and increase temperature. ✓
 C. Increase [HCl] and decrease temperature.
 D. Grind up the CaCO_3 and decrease temperature.

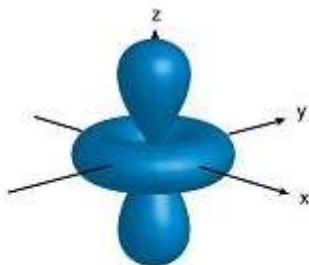
25. Which of the following diagrams describes the electron density in the dxy orbital? Not Answered



C.



D.



26. The wave number of an electromagnetic radiation is $1 \times 10^5 \text{cm}^{-1}$. The frequency of the radiation would be

Not Answered

- A. $3 \times 10^8 \text{s}^{-1}$
- B. $3 \times 10^6 \text{s}^{-1}$
- C. $3 \times 10^{10} \text{s}^{-1}$
- D. $3 \times 10^{15} \text{s}^{-1}$ ✓

27. For the gas phase reaction

$\text{N}_2 + \text{O}_2 \rightleftharpoons 2\text{NO}$ $\Delta H = +180 \text{KJmol}^{-1}$ the value of K changes with the

Not Answered

- A. Change in pressure
- B. Introduction of NO
- C. Change in concentration of N_2
- D. Change in temperature. ✓

28. In the reaction ($2\text{SO}_2 + \text{O}_2 \rightleftharpoons 2\text{SO}_3$, $K_{\text{eq}} = 100$). What will be the concentration of O_2 , if the concentration of SO_2 is the same as that of SO_3 ?

Not Answered

- A. $[\text{O}_2] = [\text{SO}_2]$
- B. $[\text{O}_2] = 0.01 \text{M}$ ✓
- C. $[\text{O}_2] = 100 \text{M}$
- D. $[\text{O}_2] = 0.1 \text{M}$

29. The decomposition of nitrosyl chloride was studied as



The following data were obtained where

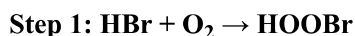
$$\text{Rate} = -\Delta[\text{NOCl}]/\Delta t$$

$[\text{NOCl}]_0$ (molecules/cm ³)	Initial Rate (molecules/cm ³ .s)
3.0×10^{16}	5.98×10^4
2.0×10^{16}	2.66×10^4
1.0×10^{16}	6.64×10^3
4.0×10^{16}	1.66×10^5

What is the rate law in the above decomposition? Not Answered

- A. $r = k[\text{NOCl}]^2$ ✓
- B. $r = K[\text{NOCl}]$
- C. $r = K[\text{NOCl}][\text{NO}]$
- D. $r = k[\text{NOCl}][\text{Cl}]$

30. Considering the mechanism for a reaction below, which of the following statements is correct?



Not Answered

- A. Br_2 is a reactant
- B. HBr is a product
- C. HOBr is a catalyst
- D. HOBr is a reaction intermediate ✓

31. The acid-base indicator bromocresol green is a weak acid. The yellow acid and blue base forms of the indicator are present in equal concentrations in a solution when the PH is 4.68. What is the PKa of bromocresol green? Not Answered

- A. 4.48
- B. 4.68 ✓
- C. 5.68
- D. 6.68

32. If NaNO_2 is added to a solution of HNO_2 , which of the following statements is true? Not Answered

- A. The PH of the solution will increase
- B. The PH of the solution will decrease ✓
- C. The PH will remain the same
- D. The equilibrium will not be affected

33. A lipid is any substance of biochemical origin that is Not Answered

- A. Soluble in both water and non-polar solvents.
- B. Insoluble in both water and non-polar solvents.
- C. Soluble in water but insoluble in non-polar solvents.

D. Soluble in non-polar solvents and insoluble in water. ✓

34. A solution in an electrolytic cell contains Cu^{2+} ($E^0 = 0.34\text{V}$), Ag^+ ($E^0 = 0.80\text{V}$), and Zn^{2+} ($E^0 = 0.76\text{V}$). If the voltage is initially very low and slowly increased, in which order will the metals be plated out on to the cathode? Not Answered

- A. $\text{Zn}^{2+} > \text{Cu}^{2+} > \text{Ag}^+$
- B. $\text{Cu}^{2+} > \text{Zn}^{2+} > \text{Ag}^+$
- C. $\text{Ag}^+ > \text{Zn}^{2+} > \text{Cu}^{2+}$
- D. $\text{Ag}^+ > \text{Cu}^{2+} > \text{Zn}^{2+}$ ✓

35. What is the concentration of sodium chloride in water needed in order to produce an aqueous solution that has an identical osmotic pressure (Isotonic) with blood ($\pi = 7.70 \text{ atm}$ at 25°C)? Not Answered

- A. 0.003 mol L^{-1}
- B. 0.006 mol L^{-1}
- C. $0.1575 \text{ mol L}^{-1}$
- D. 0.315 mol L^{-1} ✓

36. What is the molality of a 5g hydrogen peroxide (H_2O_2) in 100mL solution that is used for hair bleaching? Not Answered

- A. 0.015M
- B. 0.15M
- C. 1.5M ✓
- D. 3M

37. The maximum number of electrons in P-orbital with $n = 6$, $ml = 0$ is Not Answered

- A. 2 ✓
- B. 6
- C. 16
- D. 14

38. How many unpaired electrons are there in the Lewis structure of a N^{3-} ion? Not Answered

- A. 0 ✓
- B. 1
- C. 2
- D. 3

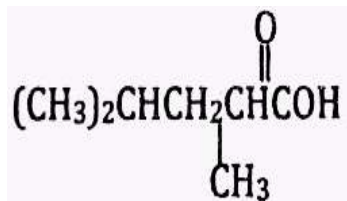
39. Which one of the following metals is extracted by thermal reduction process? Not Answered

- A. Al
- B. Cu ✓
- C. Fe
- D. Mg

40. Which of the following transitions will emit maximum energy in the hydrogen atom? Not Answered

- A. $n = 4 \rightarrow n = 3$
- B. $n = 4 \rightarrow n = 2$
- C. $n = 2 \rightarrow n = 1$ ✓
- D. $n = 3 \rightarrow n = 2$

41. what is the IUPAC name for the compound Not Answered



- A. 2, 4-dimethylpentanoic acid ✓
- B. 1, 1, 3-trimethylbutanoic acid
- C. 1-hydroxy-2, 4-dimethyl pentanone
- D. 2-carboxyisohexane

42. The connectional equilibrium constant expression (K_c) for the system

$2\text{ICl (s)} \rightleftharpoons \text{I}_2 \text{(s)} + \text{Cl}_2 \text{(g)}$ is Not Answered

- A. $[\text{I}_2][\text{Cl}_2]/[\text{ICl}]^2$
- B. $[\text{I}_2][\text{Cl}_2]^{1/2}/[\text{ICl}]$
- C. $[\text{Cl}_2]$ ✓
- D. $([\text{I}_2] + [\text{Cl}_2])^{1/2}/[\text{ICl}]$

43. Which of the following compound does NOT follow the octet rule? Not Answered

- A. CS_2
- B. PBr_3
- C. IBr
- D. BrF_5 ✓

44. Chemically, fats and oils are Not Answered

- A. Acids
- B. Alcohols
- C. Esters ✓
- D. Alkenes

45. The reaction $\text{A} + 3\text{B} = 2\text{C} + \text{D}$ is first order with respect to reactant A and second order with respect to reactant B. if the concentration of A is doubled and the concentration of B is halved, the rate of the reaction would by a factor of . Not Answered

- A. Increases, 2
- B. Decreases, 2 ✓
- C. Increases, 4

D. Decreases, 4

46. The molecular geometry of H_3O^+ ion is Not Answered

A. Linear

B. Tetrahedral

C. Bent

D. Trigonal pyramidal ✓

47. If a student wishes to prepare approximately 100 milliliters of an aqueous solution of 6M HCl using 12M HCl, which procedure is correct? Not Answered

A. Adding 50mL of 12M HCl to 50ml of water while stirring the mixture steadily.

B. Adding 25ml of 12M HCl to 50ml of water while stirring the mixture steadily.

C. Adding 50ml of water to 50ml of 12M HCl while stirring the mixture steadily. ✓

D. Adding 25ml of water to 50ml of 12M HCl while stirring the mixture steadily.

48. What is the final concentration of Cl^- ion when 250ml of 0.20M CaCl_2 solution is mixed with 250ml of 0.4M KCl solution? (Assume additive volumes) Not Answered

A. 1.6M

B. 0.4M ✓

C. 0.20M

D. 0.60M

49. Which of the following is used in the reaction called saponification? Not Answered

A. Strong base ✓

B. Strong acid

C. Hydrogen

D. Nickel

50. The concentration of nitrate ion in a solution that contains 0.900M aluminium nitrate is Not Answered

A. 0.9

B. 0.45 ✓

C. 0.3

D. 2.7

51. Electrolysis of dilute aqueous NaCl solution was carried out by passing 10 milliampere current. The time required to liberate 0.01 mol of H_2 gas at the cathode is Not Answered

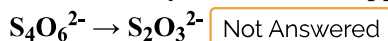
A. $9.65 \times 10^4\text{s}$

B. $19.3 \times 10^4\text{s}$

C. $28.95 \times 10^4\text{s}$

D. $38.6 \times 10^4\text{s}$ ✓

52. How many electrons will appear when the following half-reaction is balanced?



- A. 3
- B. 2 ✓
- C. 4
- D. 1

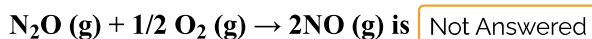
53. PKa values of three acids x, y and z are 4.5, 3.5 and 6.5, respectively. Which of the following represents the correct order of acid strength? Not Answered

- A. $x > y > z$
- B. $z > x > y$
- C. $y > x > z$ ✓
- D. $z > y > x$

54. Standard electrode potential for $\text{Sn}^{4+}/\text{Sn}^{2+}$ couple is +0.15V and that for the Cr^{3+}/Cr couple is -0.74V. These two couples in their standard state are connected to make a spontaneous reaction. The cell potential will be Not Answered

- A. +1.83V
- B. +1.19V
- C. +0.89V ✓
- D. +0.18V

55. The enthalpies of formation of gaseous N_2O and NO at 298K are 82 and 90KJ/mol, respectively. The enthalpy change for the reaction



- A. -8KJ
- B. 98KJ ✓
- C. -74KJ
- D. 8KJ

56. The following data were collected at the end point of a titration performed to find the molarity of an HCl solution.

Volume of acid (HCl) used = 14.4ml

Volume of base (NaOH) used = 22.4ml

Molarity of standard base (NaOH) = 0.20M

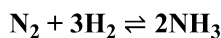
On the basis of the above data, what is the molarity of the acid solution? Not Answered

- A. 1.6M
- B. 0.64M
- C. 0.31M ✓
- D. 0.13M

57. The hybridization of the central atom in the XeF_4 molecule is Not Answered

- A. sp^2
 B. sp^3
 C. sp^3d
 D. sp^3d^2 ✓

58. For the reaction.



The rate of disappearance of H_2 is $0.01 \text{ mol L}^{-1} \text{ min}^{-1}$. The rate of appearance of NH_3 would be Not Answered

- A. $0.01 \text{ mol L}^{-1} \text{ min}^{-1}$
 B. $0.02 \text{ mol L}^{-1} \text{ min}^{-1}$
 C. $0.007 \text{ mol L}^{-1} \text{ min}^{-1}$ ✓
 D. $0.002 \text{ mol L}^{-1} \text{ min}^{-1}$

59. Bakelite is obtained from phenol by reacting with Not Answered

- A. $HCHO$ ✓
 B. $(CH_2OH)_2$
 C. CH_3CHO
 D. CH_3COCH_3

60. In which one of the following numbers are all of the zeros significant? Not Answered

- A. 100.09009 ✓
 B. 0.14329
 C. 0.1
 D. 0.003002

61. An aqueous solution contains 0.100M NaOH at $25.0^\circ C$. The PH of the solution is? Not Answered

- A. 0.1
 B. 1
 C. 7
 D. 13 ✓

62. The solubility of oxygen gas in water at $25^\circ C$ and 1.0 atm pressure of oxygen is 0.41g/L. the solubility of oxygen in water at 3.0 atm and $25^\circ C$ is g/L. Not Answered

- A. 0.014
 B. 0.31
 C. 0.041
 D. 0.123 ✓

63. The decomposition of carbon disulphide, CS_2 , to carbon mono sulphide, CS, and sulphur is first order with $K = 2.8 \times 10^{-7} \text{ s}^{-1}$ at $1000^\circ C$. What is the half-life of the reaction below at $1000^\circ C$?



- A. $5.0 \times 10^7 \text{ s}$

- B. $4.7 \times 10^{-6}\text{s}$
- C. $3.8 \times 10^5\text{s}$
- D. 2.5×10^6 ✓

64. The PK_a of a weak monoprotic acid is 4.8. What should be the ratio of [Acid]/[Salt] of a buffer, if $\text{PH} = 5.8$ is required? Not Answered

- A. 0.1 ✓
- B. 1
- C. 2
- D. 10

65. The dissolution of water in octane (C_8H_{18}) is prevented by Not Answered

- A. Dipole-dipole attraction between octane molecules.
- B. Hydrogen bonding between water molecules. ✓
- C. London dispersion forces between octane molecules.
- D. Repulsion between like charged water and octane molecules.

66. At 445°C , K_c for the following reaction is 0.020.



A mixture of H_2 , I_2 , and HI in a vessel at 445°C has the following concentrations: $[\text{HI}] = 2.0\text{M}$, $[\text{H}_2] = 0.5\text{M}$ and $[\text{I}_2] = 0.10\text{M}$, which one of the following statements concerning the reaction quotient, Q_c , is true for the above system? Not Answered

- A. Q_c is less than K_c ; more HI will be produced.
- B. Q_c is greater than K_c ; more HI will be produced.
- C. Q_c is less than K_c ; more H_2 and I_2 will be produced. ✓
- D. Q_c is greater than K_c ; more H_2 and I_2 will be produced.

67. Natural rubber is a polymer of Not Answered

- A. Butadiene
- B. Isoprene ✓
- C. Neoprene
- D. Styrene

68. Which of the following statements is true? Not Answered

- A. All forms of electromagnetic radiation are visible.
- B. Radio waves have shorter wavelength than visible light.
- C. Ultraviolet light has longer wavelengths than visible light.
- D. The frequency of radiation increases as the wavelength decreases. ✓

69. If the enthalpy change for a certain reaction $\text{A} \rightarrow \text{B}$ is -2KJ at 300K , what would be the entropy change in the surroundings? Not Answered

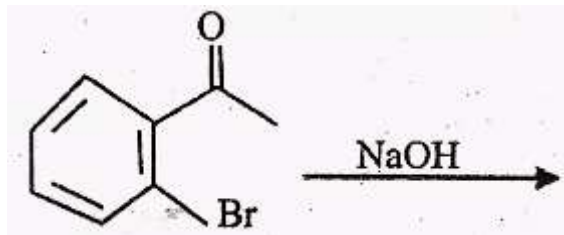
- A. 6.67J/K ✓

- B. 40J/K
- C. -3.6×10^6 J/K
- D. 3.6×10^6 J/K

70. During the electrolysis of an aqueous solution of copper sulphate using platinum electrodes, the reaction takes place at the anode is Not Answered

- A. $\text{Cu}^{2+} + 2\text{e}^- \rightarrow \text{Cu}$
- B. $\text{Cu} \rightarrow \text{Cu}^{2+} + 2\text{e}^-$
- C. $2\text{H}_2\text{O} \rightarrow 4\text{H}^+ + \text{O}_2 + 4\text{e}^-$ ✓
- D. $4\text{H}^+ + \text{O}_2 + 4\text{e}^- \rightarrow 2\text{H}_2\text{O}$

71. What is the major product of the reaction?

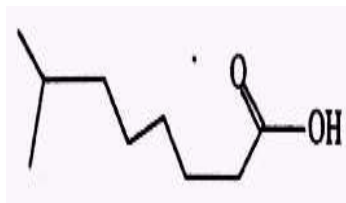


Not Answered

- A.
- B.
- C.
- D.

72. Which of the following is an acceptable IUPAC name for the organic compound shown below?

Not Answered



- A. Octanoic acid
 B. 7-methyl heptanoic acid
 C. δ - methyl heptanoic acid
 D. 7 - methyl octanoic acid ✓

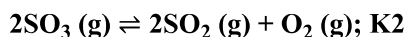
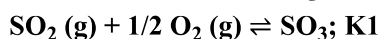
73. Which of the following molecules has a dipole moment? Not Answered

- A. XeF_2 ✓
 B. IF_3
 C. BF_3
 D. SF_5

74. Which of the following describes the balanced molecular equation when perchloric acids is mixed with solid iron (III) hydroxide? Not Answered

- A. $\text{HCl}_4(\text{aq}) + \text{Fe}(\text{OH})_3(\text{s}) \rightarrow \text{H}_2\text{O}(\text{l}) + \text{FeClO}_4(\text{aq})$
 B. $3\text{HClO}_4(\text{aq}) + \text{Fe}(\text{OH})_3(\text{s}) \rightarrow 3\text{H}_2\text{O}(\text{l}) + \text{Fe}(\text{ClO}_4)_3(\text{aq})$ ✓
 C. $3\text{HOClO}_2(\text{aq}) + \text{Fe}(\text{OH})_3(\text{s}) \rightarrow 3\text{H}_2\text{O}(\text{l}) + \text{Fe}(\text{ClO}_3)_3(\text{aq})$
 D. $\text{HOClO}_2(\text{aq}) + \text{Fe}(\text{OH})_3(\text{s}) \rightarrow \text{H}_2\text{O}(\text{l}) + \text{Fe}(\text{ClO}_3)(\text{aq})$

75. At 298 K the following two gaseous equilibrium involving SO_2 , SO_3 and O_2 are established.



Which of the following equilibrium expression is correct? Not Answered

- A. $K_1 = K_2$
 B. $K_2 = K_1^2$
 C. $K_2 = 1/K_1^2$ ✓
 D. $K_2 = 1/K_1$

76. A compound is formed by the combination of V and X as follows. What is empirical formula for the compound?



Not Answered

- A. VX
 B. V_2X
 C. V_3X ✓
 D. VX_2

77. ΔH for solid to liquid transitions for compound A is 2.73Kcal/mol and for compound B is 3.0 Kcal/mol. The melting point for compound A is 0°C and the melting point for compound B is 30°C . the entropy changes ΔS_A and ΔS_B at the two transition temperatures are related as Not Answered

- A. $\Delta S_A = \Delta S_B$
- B. $\Delta S_A < \Delta S_B$
- C. $\Delta S_B < \Delta S_A$ ✓
- D. $\Delta S_A = 300\Delta S_B/273$

78. Which of the following metals forms a volatile compound that is taken as an advantage for its extraction?

Not Answered

- A. CO
- B. Fe
- C. Ni ✓
- D. W

79. A 0.1M solution of HCl is dissolved in water. What species of ions are present at equilibrium, and what will be their equilibrium concentrations? Not Answered

- A. $[\text{H}_3\text{O}^+] = 0.1\text{M}$ $[\text{OH}^-] = 10^{-13}\text{M}$ $[\text{Cl}^-] = 0.1\text{M}$ ✓
- B. $[\text{H}_3\text{O}^+] = 0.1\text{M}$ $[\text{OH}^-] = 0.1\text{M}$ $[\text{Cl}^-] = 0.1\text{M}$
- C. $[\text{H}_3\text{O}^+] = 0.1\text{M}$ $[\text{OH}^-] = 10^{-13}\text{M}$ $[\text{Cl}^-] = 0\text{M}$
- D. $[\text{H}_3\text{O}^+] = 10^{-13}\text{M}$ $[\text{Cl}^-] = 0.1\text{M}$ $[\text{OH}^-] = 0.1\text{M}$

80 The following bases and their conjugate acids (as the chlorides) are available in the laboratory: NH_3 ($K_b = 1.8 \times 10^{-5}$), $\text{C}_6\text{H}_5\text{NCH}_3\text{CH}_2\text{NH}_2$ ($K_b = 6.4 \times 10^{-4}$) and CH_3NH_2 ($K_b = 4.4 \times 10^{-4}$). Which of these acid-base pairs are the best to prepare a buffer solution having a PH of about 9? Not Answered

- A. NH_3 + conjugate acid ✓
- B. $\text{C}_6\text{H}_5\text{N}$ + conjugate acid
- C. CH_3NH_2 + conjugate acid
- D. $\text{CH}_3\text{CH}_2\text{NH}_2$ + conjugate acid

Your Answers

you have scored 0 out of 0

Answer Key

1.D	11.B	21.C	31.B	41.A	51.D	61.D	71.A
2.B	12.A	22.A	32.B	42.C	52.B	62.D	72.D
3.B	13.C	23.D	33.D	43.D	53.C	63.D	73.A
4.C	14.C	24.B	34.D	44.C	54.C	64.A	74.B
5.C	15.D	25.B	35.D	45.B	55.B	65.B	75.C
6.C	16.C	26.D	36.C	46.D	56.C	66.C	76.C
7.A	17.B	27.D	37.A	47.C	57.D	67.B	77.C
8.B	18.A	28.B	38.A	48.B	58.C	68.D	78.C
9.B	19.A	29.A	39.B	49.A	59.A	69.A	79.A
10.B	20.A	30.D	40.C	50.B	60.A	70.C	80.A

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