NEET 2020

13th September

Chemistry Video Solution & Discussion

46.   Sucrose on hydrolysis gives

        (1) α-D-Glucose + β-D-Glucose

        (2) α-D-Glucose + β-D-Fructose

        (3) α-D-Fructose + β-D-Fructose

        (4) β-D-Glucose + α-D-Fructose

Answer (2)

47.   Elimination reaction of 2-Bromo-pentane to form pent-2-ene is

        (a) β-Elimination reaction

        (b) Follows Zaitsev rule

        (c) Dehydrohalogenation reaction

        (d) Dehydration reaction

        (1) (a), (c), (d)   (2) (b), (c), (d)   (3) (a), (b), (d)   (4) (a), (b), (c)

Answer (4)

48.   The number of Faradays(F) required to produce 20 g of calcium from molten $CaCl_2$ (Atomic mass of Ca = 40 g mol^{-1}) is

        (1) 2   (2) 3   (3) 4   (4) 1

Answer (4)

49.   An element has a body centered cubic (bcc) structure with a cell edge of 288 pm. The atomic radius is

        (1) $\dfrac{\sqrt{2}}{4} \times 288 \, \text{pm}$ (2) $\dfrac{4}{\sqrt{3}} \times 288 \, \text{pm}$ (3) $\dfrac{4}{\sqrt{2}} \times 288 \, \text{pm}$ (4) $\dfrac{\sqrt{3}}{4} \times 288 \, \text{pm}$

Answer (4)

50.   HCl was passed through a solution of $CaCl_2$, $MgCl_2$ and NaCl. Which of the following compound(s) crystallise(s)?

        (1) Only NaCl

        (2) Only $MgCl_2$

        (3) NaCl, $MgCl_2$ and $CaCl_2$

        (4) Both $MgCl_2$ and $CaCl_2$

Answer (2)

51.   Find out the solubility of $Ni(OH)_2$ in 0.1 M NaOH. Given that the ionic product of $Ni(OH)_2$ is 2×10^{-15}

        (1) 2×10^{-8} M   (2) 1×10^{-13} M   (3) 1×10^{8} M   (4) 2×10^{-13} M

Answer (4)

52.   For the reaction, $2Cl(g) \longrightarrow Cl_2(g)$, the correct option is

        (1) $\Delta_r H > 0$ and $\Delta_r S < 0$

        (2) $\Delta_r H < 0$ and $\Delta_r S > 0$

        (3) $\Delta_r H < 0$ and $\Delta_r S < 0$

        (4) $\Delta_r H > 0$ and $\Delta_r S > 0$

Answer (3)

53.   Which of the following is the correct order of increasing field strength of ligands to form coordination compounds?

        (1) $SCN^- < F^- < CN^- < C_2O_4^{2-}$

        (2) $F^- < SCN^- < C_2O_4^{2-} < CN^-$

        (3) $CN^- < C_2O_4^{2-} < SCN^- < F^-$

        (4) $SCN^- < F^- < C_2O_4^{2-} < CN^-$

Answer (4)

54. The calculated spin only magnetic moment of Cr^{2+} ion is

    (1) 4.90 BM   (2) 5.92 BM   (3) 2.84 BM   (4) 3.87 BM
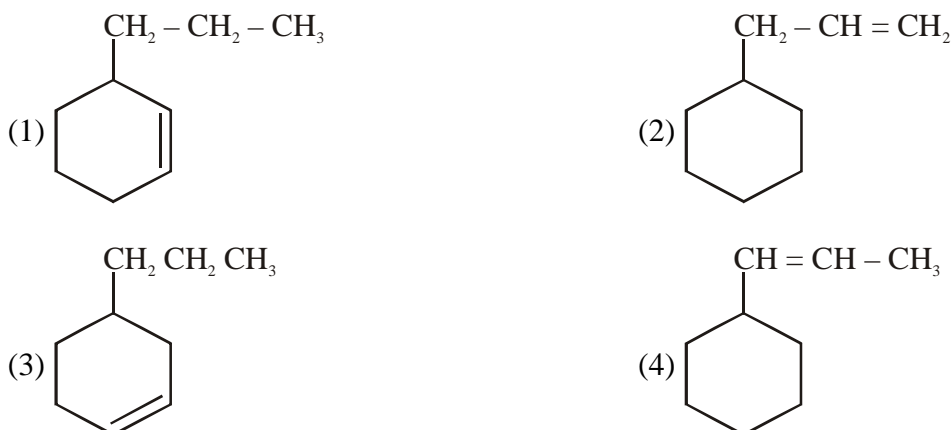
Answer (1)

55. Which of the following set of molecules will have zero dipole moment?

    (1) Boron trifluoride, hydrogen fluoride, carbon dioxide, 1,3-dichlorobenzene

    (2) Nitrogen trifluoride, beryllium difluoride, water, 1,3-dichlorobenzene

    (3) Boron trifluoride, beryllium difluoride, carbon dioxide, 1,4-dichlorobenzene

    (4) Ammonia, beryllium difluoride, water, 1,4-dichlorobenzene

Answer (3)

56. The following metal ion activates many enzymes, participates in the oxidation of glucose to produce ATP and with Na, is responsible for the transmission of nerve signals.

    (1) Copper   (2) Calcium   (3) Potassium   (4) Iron

Answer (3)

57. An alkene on ozonolysis gives methanal as one of the product. Its structure is.

Answer (2)

58. The rate constant for a first order reaction is 4.606×10^{-3} s^{-1}. The time required to reduce 2.0 g of the reactant to 0.2 g is :

    (1) 200 s   (2) 500 s   (3) 1000 s   (4) 100 s

Answer (2)

59. Reaction between acetone and methylmagnesium chloride followed by hydrolysis will give :

    (1) Sec. butyl alcohol   (2) Tert. butyl alcohol

    (3) Isobutyl alcohol   (4) Isopropyl alcohol

Answer (2)

60. Which of the following is a natural polymer?

(1) Poly (Butadiene-styrene)

(2) Polybutadiene

(3) Poly (Butadiene-acrylonitrile)

(4) cis-1, 4-polyisoprene

Answer (4)

61. Identify the **correct** statements from the following :

(a) $CO_2(g)$ is used as refrigerant for ice-cream and frozen food.

(b) The structure of C_{60} contains twelve six carbon rings and twenty five carbon rings.

(c) ZSM-5, a type of zeolite, is used to convert alcohols into gasoline.

(d) CO is colorless and odourless gas.

(1) (a) and (c) only   (2) (b) and (c) only   (3) (c) and (d) only   (4) (a), (b) and (c) only
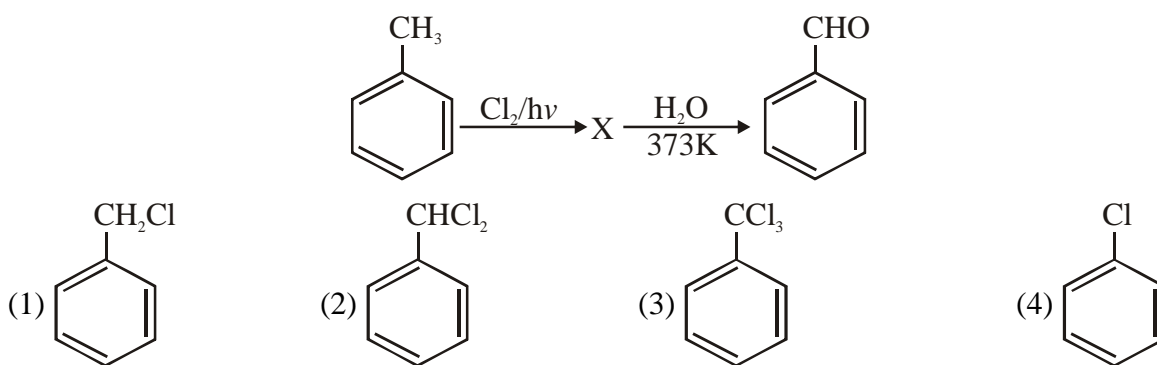
Answer (3)

62. The **correct** option for free expansion of an ideal gas under adiabatic condition is

(1) $q = 0, \Delta T < 0$ and $w > 0$

(2) $q < 0, \Delta T = 0$ and $w = 0$

(3) $q > 0, \Delta T > 0$ and $w > 0$

(4) $q = 0, \Delta T = 0$ and $w = 0$

Answer (4)

63. Which of the following oxoacid of sulphur has $-O-O-$ linkage?

(1) H_2SO_4, sulphuric acid

(2) $H_2S_2O_8$, peroxodisulphuric acid

(3) $H_2S_2O_7$, pyrosulphuric acid

(4) H_2SO_3, sulphurous acid

Answer (2)

64. Identify compound X in the following sequence of reactions

Answer (2)

65. The number of protons, neutrons and electrons in $^{175}_{71}Lu$, respectively, are

(1) 104, 71 and 71   (2) 71, 71 and 104   (3) 175, 104 and 71   (4) 71, 104 and 71

Answer (4)

66. Identify the **incorrect** statement.

    (1) The transition metals and their compounds are known for their catalytic activity due to their ability to adopt multiple oxidation states and to form complexes.

    (2) Interstitial compounds are those that are formed when small atoms like H, C or N are trapped inside the crystal lattices of metals.

    (3) The oxidation states of chromium in CrO_4^{2-} and $Cr_2 O_7^{2-}$ are not the same.

    (4) Cr^{2+} (d^4) is a stronger reducing agent than Fe^{2+} (d^6) in water.

Answer (3)

67. Which of the following is a cationic detergent?

    (1) Sodium stearate   (2) Cetyltrimethyl ammonium bromide

    (3) Sodium dodecylbenzene sulphonate   (4) Sodium lauryl sulphate

Answer (2)

68. The freezing point depression constant (K_f) of benzene is 5.12 K kg mol^{-1}. The freezing point depression for the solution of molality 0.078 m containing a non-electrolyte solute in benzene is (rounded off upto two decimal places) :

    (1) 0.80 K   (2) 0.40 K   (3) 0.60 K   (4) 0.20 K

Answer (2)

69. Identify the incorrect match.

    Name IUPAC   **Official Name**

    (a) Unnilunium   (i) Mendelevium

    (b) Unniltrium   (ii) Lawrencium

    (c) Unnilhexium   (iii) Seaborgium

    (d) Unununnium   (iv) Darmstadtium

    (1) (b), (ii)   (2) (c), (iii)   (3) (d), (iv)   (4) (a), (i)

Answer (3)

70. The mixture which shows positive deviation from Raoult's law is

    (1) Benzene + Toluene   (2) Acetone + Chloroform

    (3) Chloroethane + Bromoethane   (4) Ethanol + Acetone

Answer (4)

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71. Match the following :

Oxide	Nature
(a) CO	(i) Basic
(b) BaO	(ii) Neutral
(c) Al_2O_3	(iii) Acidic
(d) Cl_2O_7	(iv) Amphoteric

Which of the following is **correct** option?

	(a)	**(b)**	**(c)**	**(d)**
(1)	(ii)	(i)	(iv)	(iii)
(2)	(iii)	(iv)	(i)	(ii)
(3)	(iv)	(iii)	(ii)	(i)
(4)	(i)	(ii)	(iii)	(iv)

Answer (1)

72. Which one of the followings has maximum number of atoms ?

    (1) 1 g of $Mg(s)$ [Atomic mass of Mg = 24]   (2) 1 g of $O_2(g)$ [Atomic mass of O = 16]

    (3) 1 g of $Li(s)$ [Atomic mass of Li = 7]   (4) 1 g of $Ag(s)$ [Atomic mass of Ag = 108]

Answer (3)

73. Reaction between benzaldehyde and acetophenone in presence of dilute NaOH is known as

    (1) Cannizzaro's reaction   (2) Cross Cannizzaro's reaction

    (3) Cross Aldol condensation   (4) Aldol condensation

Answer (3)

74. A tertiary butyl carbocation is more stable than a secondary butyl carbocation because of which of the following ?

    (1) + R effect of – CH_3 groups   (2) – R effect of – CH_3 groups

    (3) Hyperconjugation   (4) – I effect of – CH_3 groups

Answer (3)

75. Which of the following is not correct about carbon monoxide ?

    (1) It reduces oxygen carrying ability of blood.

    (2) The carboxyhaemoglobin (haemoglobin bound to CO) is less stable than oxyhaemoglobin.

    (3) It is produced due to incomplete combustion.

    (4) It forms carboxyhaemoglobin

Answer (2)

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76. Which of the following is a basic amino acid ?

    (1) Alanine   (2) Tyrosine   (3) Lysine   (4) Serine

Answer (3)

77. Urea reacts with water to form A which will decompose to form B. B when passed through Cu^{2+} (aq), deep blue colour solution C is formed. What is the formula of C from the following ?

    (1) $[Cu(NH_3)_4]^{2+}$ (2) $Cu(OH)_2$ (3) $CuCO_3 \cdot Cu(OH)^2$ (4) $CuSO^4$

Answer (1)

78. A mixture of N_2 and Ar gases in a cylinder contains 7 g of N_2 and 8 g of Ar. If the total pressure of the mixture of the gases in the cylinder is 27 bar, the partial pressure of N_2 is :

    [Use atomic masses (in g mol^{-1}) : N = 14, Ar = 40]

    (1) 12 bar   (2) 15 bar   (3) 18 bar   (4) 9 bar

Answer (2)

79. Identify the correct statement from the following :

    (1) Blister copper has blistered appearance due to evolution of CO_2.

    (2) Vapour phase refining is carried out for Nickel by Van Arkel method.

    (3) Pig iron can be moulded into a variety of shapes.

    (4) Wrought iron is impure iron with 4% carbon.

Answer (3)

80. Hydrolysis of sucrose is given by the following reaction. Sucrose $+ H_2O \rightleftharpoons$ Glucose + Fructose

    If the equilibrium constant (K_C) is 2×10^{13} at 300 K, the value of $\Delta_r G^\ominus$ at the same temperature will be :

    (1) 8.314 J mol^{-1}K$^{-1} \times 300$ K $\times \ln(2 \times 10^{13})$

    (2) 8.314 J mol^{-1}K$^{-1} \times 300$ K $\times \ln(3 \times 10^{13})$

    (3) -8.314 J mol^{-1}K$^{-1} \times 300$ K $\times \ln(4 \times 10^{13})$

    (4) -8.314 J mol^{-1}K$^{-1} \times 300$ K $\times \ln(2 \times 10^{13})$

Answer (4)

81. Identify a molecule which does not exist.

    (1) Li_2 (2) C_2 (3) O_2 (4) He_2

Answer (4)

82. An increase in the concentration of the reactants of a reaction leads to change in

    (1) Heat of reaction   (2) Threshold energy

    (3) Collision frequency   (4) Activation energy

Answer (3)

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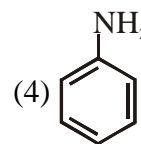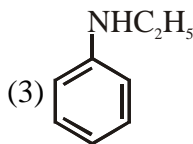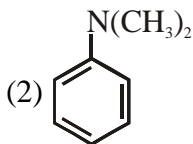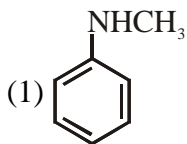
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83.	Which of the following alkane cannot be made in good yield by Wurtz reaction?

(1) 2,3-Dimethylbutane　(2) n-Heptane　(3) n-Butane　(4) n-Hexane

Answer (2)

84.	Which of the following amine will give the carbylamine test?

(1) NHCH$_3$ (phenyl)　(2) N(CH$_3$)$_2$ (phenyl)　(3) NHC$_2$H$_5$ (phenyl)　(4) NH$_2$ (phenyl)

Answer (4)

85.	On electrolysis of dil. sulphuric acid using Platinum (Pt) electrode, the product obtained at anode will be

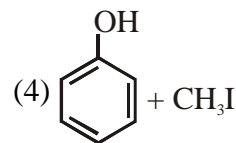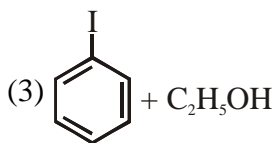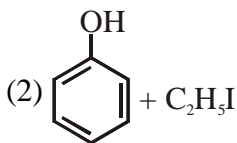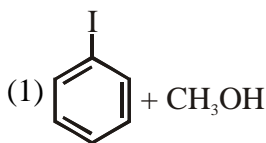(1) Oxygen gas　(2) H$_2$S gas　(3) SO$_2$ gas　(4) Hydrogen gas

Answer (1)

86.	What is the change in oxidation number of carbon in the following reaction?

$$CH_4(g) + 4Cl_2(g) \rightarrow CCl_4(l) + 4HCl(g)$$
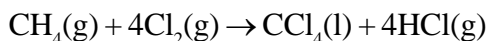
(1) 0 to +4　(2) –4 to +4　(3) 0 to –4　(4) +4 to +4

Answer (2)

87.	Anisole on cleavage with HI gives

(1) (phenyl)-I + CH$_3$OH　(2) (phenyl)-OH + C$_2$H$_5$I　(3) (phenyl)-I + C$_2$H$_5$OH　(4) (phenyl)-OH + CH$_3$I

Answer (4)

88.	Measuring Zeta potential is useful in determining which property of colloidal solution?

(1) Solubility

(2) Stability of the colloidal particles

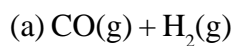(3) Size of the colloidal particles

(4) Viscosity

Answer (2)

89.	Paper chromatography is an example of

(1) Partition chromatography

(2) Thin layer chromatography

(3) Column chromatography

(4) Adsorption chromatography
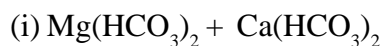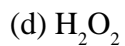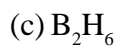
Answer (1)

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90. Match the following and identify the **correct** option.

(a) $CO(g) + H_2(g)$ (i) $Mg(HCO_3)_2 + Ca(HCO_3)_2$

(b) Temporary hardness of water   (ii) An electron deficient hydride

(c) B_2H_6 (iii) Synthesis gas

(d) H_2O_2 (iv) Non-planar structure

	(a)	(b)	(c)	(d)
(1)	(iii)	(ii)	(i)	(iv)
(2)	(iii)	(iv)	(ii)	(i)
(3)	(i)	(iii)	(ii)	(iv)
(4)	(iii)	(i)	(ii)	(iv)

Answer (4)

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