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Chemistry mock test 6 2022-23

Time : 60 Min	Chem : Full Portion Paper	Marks : 200

51) Which of the following associated with isotonic solutions is not correct?
A) They will have the same vapour pressure.
B) Osmosis does not take place when the two solutions are separated by a semipermeable membrane.
C) They have the same weight concentrations.
D) They will have the same osmotic pressure.

52) Conc. H_2SO_4 is diluted
A) by adding H_2SO_4 in water.
B) by adding water in H_2SO_4.
C) by adding glacial acetic acid in H_2SO_4.
D) none of the above.

53) Name of $(CH_3)_2HC-O-CH_2-CH_2-CH_3$ is
A) di-isopropyl ether.
B) isopropyl propyl ketone.
C) dipropyl ether.
D) isopropyl propyl ether.

54) Carbon atoms in the compound $(CN)_4C_2$ are
A) sp hybridized.
B) sp and sp^2 hybridized.
C) sp^2 hybridized.
D) sp, sp^2 and sp^3 hybridized.

55) Acetylene molecule has carbon in
A) sp^3d - hybridization.
B) sp^3 - hybridization.
C) sp^2 - hybridization.
D) sp - hybridization.

56) Arrange $Ce^{+3}, La^{+3}, Pm^{+3}$ and Yb^{+3} in increasing order of their ionic radii.
A) $Pm^{+3} < La^{+3} < Ce^{+3} < Yb^{+3}$
B) $Yb^{+3} < Pm^{+3} < La^{+3} < Ce^{+3}$
C) $Ce^{+3} < Yb^{+3} < Pm^{+3} < La^{+3}$
D) $Yb^{+3} < Pm^{+3} < Ce^{+3} < La^{+3}$

57) For exothermic reaction, the equilibrium constant
A) decreases with increase of temperature.
B) increases with increase of temperature.
C) decreases with increase of P.
D) increases with increase of P.

58) Electrolytic conduction differs from metallic conduction in that in the case of electrolytic conduction
A) the resistance is independent of the length of the conductor.
B) the flow of current does not generate heat.
C) the resistance decreases with increasing temperature.
D) the resistance increases with increasing temperature.

59) A biological catalyst is essentially
A) a carbohydrate.
B) an enzyme.
C) an amino acid.
D) a nitrogen compound.

60) Bessemer converter is used in the manufacture of
A) cast iron.
B) wrought iron.
C) steel.
D) pig iron.

61) Sodium ethoxide is a specific reagent for
A) dehalogenation.
B) dehydrohalogenation.
C) dehydrogenation.
D) dehydration.

62) In a given shell, the order of screening effect is
A) d > f < s > p
B) p < d < s < f
C) f > d > p > s
D) s > p > d > f

63) The order of susceptibility of nucleophilic attack on aldehydes follows which one of the following order?
A) $3^0 > 2^0 > 1^0$
B) $2^0 > 3^0 > 1^0$
C) $1^0 > 2^0 > 3^0$
D) $1^0 > 3^0 > 2^0$

64) Which of the following ions can cause coagulation of proteins?
A) Mg^{++}
B) Ca^{++}
C) Ag^{+}
D) Na^{+}

65) An emulsion is a colloidal dispersion of
A) a liquid in a liquid.
B) a liquid in a gas.
C) a solid in a liquid.
D) a gas in a solid.

66) In esterification of an acid, the other reagent is

A) alcohol.
B) aldehyde.
C) amine.
D) water.

67) Certain bimolecular reactions which follow the first order kinetics are called
A) pseudo unimolecular reactions.
B) bimolecular reactions.
C) unimolecular reactions.
D) first order reactions.

68) The dyes which are applied to the fabric in the colourless reduced state and then oxidized to coloured state are called
A) disperse dyes.
B) vat dyes.
C) azo dyes.
D) triphenyl methane dye.

69) Melamine is
A) white crystalline solid.
B) gas.
C) yellow liquid.
D) colloidal solution.

70) Which gas is obtained, when urea is heated with HNO_2?
A) NH_3
B) O_2
C) H_2
D) N_2

71) Who put forwarded the nuclear theory of the atom?
A) Aston
B) Rutherford
C) Neils Bohr
D) J.J. Thomson

72) Heaviest particle is
A) Electron
B) Proton
C) Neutron
D) Meson

73) The bond angle in ethylene is
A) 90^o
B) 109^o
C) 120^o
D) 180^o

74) Nature of the bond formed between two elements depends on the
A) electron affinity.
B) ionization potential.
C) electronegativity.
D) oxidation potential.

75) In which of the following compounds, is the oxidation number of iodine is fractional?
A) IF_7
B) IF_3
C) IF_2
D) I_3^-

76) In osmosis reaction, the volume of solution
A) increases slowly.
B) decreases slowly.
C) suddenly increases.
D) no change.

77) The reaction
$CH_3COOH + Cl_2 \xrightarrow{P} ClCH_2COOH + HCl$ is called
A) Birch reaction.
B) Hell-Volhard-Zelinsky reaction.
C) Rosenmund reaction.
D) Hunsdiecker reaction.

78) A solution which is resistant to change of pH upon the addition of an acid or a base is known as
A) an indicator.
B) a buffer.
C) a crystalloid.
D) a colloid.

79) Choose the correct option: C and Si have
A) same physical properties
B) same physical but different chemical properties
C) different physical properties
D) different chemical and physical properties.

80) The reaction, $CH_3Br + Na \rightarrow Product$, is called
A) Wurtz reaction.
B) Perkin reaction.
C) Levitt reaction.
D) Aldol condensation.

81) When chloroform reacts with ethyl amine in presence of alcoholic KOH, the compound formed is
A) ethyl isocyanide.
B) ethyl cyanide.
C) formic acid.
D) an amide.

82) Addition of HCl does not obey anti-markownikoff's rule because
A) it is a gas.
B) it is a strong acid.
C) its bond energy is high.
D) its bond energy is less.

83) Which one of the following material conducts electricity?
A) Diamond
B) Crystalline sodium chloride
C) Barium sulphate
D) Fused potassium chloride

84) To obtain a buffer which should be suitable for maintaining a pH of about $4-5$, we need to have in solution, a mixture of
A) a weak acid + its salt with a strong base.
B) a strong acid + its salt with a weak base.

C) a weak base + its salt with a strong acid.
D) a strong base + its salt with a weak acid.

85) In the froth floatation process for the purification of ores, the ore particles float because
A) their surface is not easily wetted by water.
B) they are light.
C) they bear electrostatic charge.
D) they are insoluble.

86) The lustre of a metal is due to
A) presence of free electrons.
B) its chemical inertness.
C) its high polishing.
D) its high density.

87) Compounds with high heat of formation are less stable because
A) energy rich state leads to instability.
B) it is difficult to synthesis them.
C) molecules of such compounds are distorted.
D) high temperature is required to synthesize them.

88) When formic acid reacts with PCl_5, it forms
A) acetyl chloride.
B) formyl chloride.
C) methyl chloride.
D) propionyl chloride.

89) The total pressure exerted by a number of non-reacting gases is equal to the sum of the partial pressures of the gases under the same conditions is known as
A) Dalton's law.
B) Avogadro's law.
C) Charles's law.
D) Boyle's law.

90) Which of the following can adsorb largest volume of hydrogen gas?
A) Colloidal platinum
B) Colloidal palladium
C) Finely divided nickel
D) Finely divided platinum

91) For which of the following reactions $K_p = K_c$?
A) $N_2O_4(g) \rightleftharpoons 2NO_2(g)$
B) $H_2(g) + Cl_2(g) \rightleftharpoons 2HCl(g)$
C) $N_2(g) + 3H_2(g) \rightleftharpoons 2NH_3(g)$
D) $2NOCl(g) \rightleftharpoons 2NO(g) + Cl_2(g)$

92) If two compounds having the same empirical formula but different molecular formula must have _____.
A) same viscosity
B) same vapor density
C) different percentage composition
D) different molecular weights

93) Which of the following represents clear electropositive properties?
A) I
B) Br
C) Cl
D) F

94) Electric furnaces are lined with magnesia because
A) it has no effect of electricity.
B) it melts at very high temperature.
C) it gives oxygen on heating.
D) it is not affected by acids.

95) Molecular weight of heavy water is
A) 20
B) 19
C) 18
D) 17

96) Give the IUPAC name for $\left[Co(NH_3)_6\right]\left[Cr(CN)_6\right]$.
A) Hexa ammine cobalt (III) hexa cyano chromium (VI)
B) Hexa ammine cobalt (III) hexa cyano chromate (III)
C) Hexa cyano chromium cobalt thexathexa ammine (VI)
D) Hexa cyano chromium (III) hexa ammine cobalt (III)

97) Which of the following damages WBC, bone-marrows and lymph nodes
A) Ca^{40}
B) I^{131}
C) Caesium
D) Sr^{90}

98) When the pH of a solution is 2, the hydrogen ion concentration in moles per litre is
A) 1×10^{-2}
B) 1×10^{-7}
C) 1×10^{-12}
D) 1×10^{-14}

99) The high melting point and insolubility in organic solvents of sulphanilic acid are due to its ____ structure.
A) hexagonal
B) cubic
C) bipolar ionic
D) simple ionic

100) When NaCl is dissolved in water, the sodium ion is
A) hydrated.
B) hydrolyzed.
C) reduced.
D) oxidized.