Studentpad

NEET 2021-22

Time : 90 Min	Chem : Full Portion Paper	Marks : 180

01) Which is the correct representation of the solubility product constant of Ag_2CrO_4 ?

1) $[2Ag^+]^2\,[CrO_4^{-2}]$

2) $[2Ag^+]\,[CrO_4^{-2}]$

3) $[Ag^+]\,[CrO_4^{-2}]$

4) $[Ag^+]^2[CrO_4^{-2}]$

02) In presence of light toluene on reaction with chlorine gives
1) benzoyl chloride.
2) ortho chlorotoluene.
3) benzyl chloride.
4) para chloro toluene.

03) Find the pairs of substances which illustrate the law of multiple proportions.
1) H_2O and D_2O
2) CO and CO_2
3) MgO and $Mg(OH)_2$
4) NaCl and NaBr

04) Isotonic solution have the same
1) normality.
2) molar concentration.
3) density.
4) none of these.

05) Which one is not an organometallic compound?

1) KC_4H_9

2) $(CH_3)_4\,Sn$

3) C_2H_5ONa

4) RMgX

06) The value of x in the partial redox equation $MnO_4^- + 8H^+ + xe \rightleftharpoons Mn^{2+} + 4H_2O$ is
1) 0
2) 1
3) 3
4) 5

07) The rate constant is given by the equation $k = pze^{-E/RT}$. Which factor should register a decrease for the reaction to proceed more rapidly?
1) Z
2) T
3) E
4) P

08)

$$C_6H_5 - CH = CHCHO \xrightarrow{X} C_6H_5CH = CHCH_2OH$$

In the above sequence X can be

1) $NaBH_4$

2) H_2 / Ni

3) $K_2Cr_2O_7$ / H^+

4) Both (1) and (2)

09) Of the following four reactions, formic and acetic acids differ in which respect?
1) Reduction of Fehling solution
2) Replacement of hydrogen by sodium
3) Formation of ester with alcohol
4) Blue litmus reaction

10) In HCHO, 'C' has hybridization

1) sp^3

2) sp^2

3) sp

4) All the above

11) **Statement 1:**White phosphorus is more reactive than red phosphorus.
Statement 2: Red phosphorus consists of P_4 tetrahedral units linked to one another to form linear chains.
1) Both Statement 1 and Statement 2 are true but Statement 2 is not the correct explanation of Statement 1
2) Both Statement 1 and Statement 2 are true and the Statement 2 is correct explanation of the Statement 1
3) This Statement 1 is true, but the Statement 2 is false
4) Both Statement 1 and Statement 2 are false

12) One mole of magnesium nitride on the reaction with an excess of water gives
1) one mole of nitric acid.
2) one mole of ammonia.
3) two moles of nitric acid.
4) two moles of ammonia.

13) The phosphate of a metal has the formula MPO_4. The formula of its nitrate will be

1) $M(NO_3)_3$

2) $M(NO_3)_2$

3) $M_2(NO_3)_2$

4) MNO_3

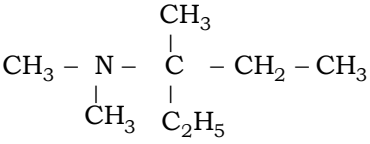
14) What does not change on changing temperature?
1) Molality
2) Normality
3) Mole fraction

4) Both 1 & 3

15) The 'mercerised cellulose' is chemically prepared by
1) hydrolysis.
2) halogenation.
3) mercuriation.
4) acetylation.

16) Point out the wrong statement : In a given period of the periodic table the s - block element has, in general, a lower value of
1) electron affinity.
2) atomic radius.
3) electronegativity.
4) ionization energy.

17) IUPAC name of the following is



1) 3-N, N dimethyl amino-3- methyl pentane
2) 3, (N, N-Trimethyl) pentanammine
3) 3 (N, N-Trimethyl)-3-aminopentane
4) 3-dimethylamino-3-methyl pentane

18) DNA multiplication is called
1) replication.
2) transcription.
3) transduction.
4) translation.

19) Heavy water is
1) D_2O.
2) water at 0°C.
3) water containing Fe, Cr, Mn.
4) water obtained after a number of distillations.

20) O_3 reacts with $CH_2 = CH_2$ to form ozonide. On hydrolysis it forms
1) HCHO
2) ethylene oxide.
3) ethyl alcohol.
4) ethylene glycol.

21) Which of the following is boiled with ethyl chloride to form ethyl alcohol?
1) H_2O_2
2) H_2O
3) Aqueous KOH
4) Alcoholic KOH

22) The hydroxides which sublime on heating are
1) $Mg(OH)_2$
2) RbOH
3) KOH
4) LiOH

23) _____ is not a method of refining of metals?
1) Liquation
2) Smelting
3) Poling
4) Electrolysis

24) Proteins when heated with conc. HNO_3 give a yellow colour. This is
1) xanthoproteic test
2) oxidizing test
3) Hoppe's test
4) acid-base test

25) Which reagent will bring about the conversion of carboxylic acids into esters?
1) C_2H_5OH
2) Dry $HCl + C_2H_5OH$
3) $LiAlH_4$
4) $Al(OC_2H_5)_3$

26) Cuprous ion is colourless, while cupric ion is coloured because
1) Cuprous ion has a completed d -orbital and cupric ion has an incomplete d -orbital
2) Both have unpaired electrons in d -orbital
3) Both have half-filled p and d -orbitals
4) Cuprous ion has incomplete d -orbital and cupric ion has a completed d -orbital

27) Hydrogen can be prepared by mixing steam, and water gas at 500°C in the presence of Fe_3O_4 and Cr_2O_3. This process is called
1) Parke's process.
2) Bosch process.
3) Nelson process.
4) Serpeck's process.

28) The point of temperature inversion between troposphere and ionosphere is known as
1) mesopause
2) stratopause
3) tropopause
4) ionopause

29) For the reaction $H_2O(s) \rightleftharpoons H_2O(l)$ at 0^oC and normal pressure
1) $\Delta H < T\Delta S$
2) $\Delta H = \Delta G$
3) $\Delta H = T\Delta S$
4) $\Delta H > T\Delta S$

30) Choose the correct option: Electrolysis involves oxidation and reduction respectively at
1) cathode and anode
2) anode and cathode
3) at both the electrodes
4) none of these

31) Which of the following can work as a dehydrating agent for alcohols?
1) H_3PO_4
2) H_2SO_4
3) Al_2O_3
4) All of these

32) The electron density between 1s and 2s orbital is
1) zero.
2) high.
3) low.
4) none of these.

33) Which of the following reaction is expected to readily give a hydrocarbon product in good yields?
1) $(CH_3)_2CCl \xrightarrow{C_2H_5OH}$
2) $CH_3 - CH_3 \xrightarrow[hv]{Cl_2}$
3) $RCOOAg \xrightarrow{I_2}$
4) $RCOOK \xrightarrow{\text{Oxidation Electrolysis}}$

34) Sodium metal crystallizes as a body centered cubic lattice with the cell edge 4.29 Å. What is the radius of sodium atom?
1) 9.312×10^{-7} cm
2) 3.817×10^{-8} cm
3) 2.371×10^{-7} cm
4) 1.857×10^{-8} cm

35) The gastric juice in our stomach contains enough HCl to make the hydrogen ion concentration about 0.01 mole / litre. The pH of gastric juice is
1) 14
2) 2
3) 1
4) 0.01

36) The first viral disease detected in human being was
1) yellow fever.
2) small pox.
3) influenza.
4) cold.

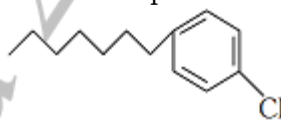
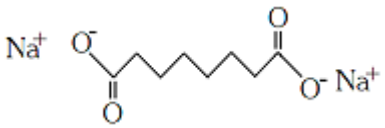
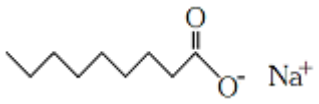
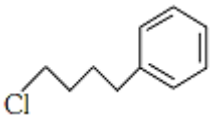
37) H_2S reacts with O_2 to form
1) $H_2SO_4 + S$
2) $H_2O + SO_3$
3) $H_2O + SO_2$
4) $H_2O + S$

38) Bauxite ore is concentrated by
1) chemical separation.
2) froth flotation.
3) electromagnetic separation.
4) hydraulic separation.

39) Statement 1 : K and Cs are used in photoelectric cells.
Statement 2 : K and Cs emit electrons when exposure to light.
1) Both statement 1 and statement 2 are true and the statement 2 is the correct explanation of the statement 1.
2) Both statement 1 and statement 2 are true but statement 2 is not the correct explanation of the statement 1.
3) Statement 1 is true but statement 2 is false.
4) The statement 1 and statement 2 both are false.

40) K_p for the following reaction at 700 K is 1.3×10^{-3} atm^{-1}. The K_c at same temperature for the reaction $2SO_2 + O_2 \rightleftharpoons 2SO_3$ will be
1) 7.4×10^{-2}
2) 5.2×10^{-2}
3) 3.1×10^{-2}
4) 1.1×10^{-2}

41) The formation of water from $H_2(g)$ and $O_2(g)$ is an exothermic reaction because
1) the temperature of $H_2(g)$ and $O_2(g)$ is more than that of water.
2) the chemical energy of $H_2(g)$ and $O_2(g)$ is more than that of water.
3) the chemical energy of $H_2(g)$ and $O_2(g)$ is less than that of water.
4) not dependent on energy.

42) Which of the following molecules is most suitable to disperse benzene in water?
1) 
2) 
3) 
4) 

43) Order of basicity of ethyl amines is
1) Secondary > Primary > Tertiary
2) Primary > Secondary > Tertiary
3) Secondary > Tertiary > Primary
4) Tertiary > Primary > Secondary

44) A filled or half-filled set of p or d-orbitals is spherically symmetric. Point out the species which has spherical symmetry.
1) Fe
2) Cl^-
3) C
4) Na

45) The constant R is
1) work done per mole.
2) work done per degree per mole.
3) work done per degree absolute.
4) work done per molecule.