RAVI TEST PAPERS & NOTES, WHATSAPP – 8056206308

**RAVI MATHS TUITION CENTER ,GKM COLONY, CHENNAI- 82. PH: 8056206308**

**12TH CHEMISTRY 1 MARK TEST 1**

12th Standard
Chemistry

Reg.No. : | | | | | | |

Exam Time : 00:50:00 Hrs

Total Marks : 50

50 x 1 = 50

1) Bauxite has the composition
(a) $Al_2O_3$ (b) $Al_2O_3nH_2O$ (c) $Fe_2O_3.2H_2O$ (d) None of these

2) Roasting of sulphide ore gives the gas (A).(A) is a colourless gas. Aqueous solution of (A) is acidic. The gas (A) is
(a) $CO_2$ (b) $So_3$ (c) $SO_2$ (d) $H_2S$

3) Which one of the following reaction represents calcinations?
(a) $2Zn + O_2 \rightarrow 2ZnO$ (b) $2ZnS + 3O_2 \rightarrow 2ZnS + 3O_2 \rightarrow 2ZnO_2 \rightarrow 2ZnO + 2SO_2$ (c) $MgCO_3 \rightarrow MgO + CO_2$ (d) Both (a) and (c)

4) The metal oxide which cannot be reduced to metal by carbon is
(a) PbO (b) $AL_2O_3$ (c) ZnO (d) Feo

5) Which of the metal is extracted by Hall-Heroult process?
(a) Al (b) Ni (c) Cu (d) Zn

6) An aqueous solution of borax is
(a) neutral (b) acidic (c) basic (d) amphoteric

7) Boric acid is an acid because its molecule (NEET)
(a) contains replaceable H+ ion (b) gives up a proton (c) combines with proton to form water molecule (d) accepts OH- from water ,releasing proton.

8) Which among the following is not a borane?
(a) $B_2H_6$ (b) $B_3H_6$ (c) $B_4H_{10}$ (d) none of these

9) Which of the following metals has the largest abundance in the earth's crust?
(a) Aluminium (b) calcium (c) Magnesium (d) sodium

10) In diborane, the number of electrons that accounts for banana bonds is
(a) six (b) two (c) four (d) three

11) In which of the following , $NH_3$ is not used?
(a) Nessler's reagent (b) Reagent for the analysis of IV group basic radical (c) Reagent for the analysis of III group basic radical (d) Tollen's reagent

12) Which is true regarding nitrogen?
(a) least electronegative element (b) has low ionisation enthalpy than oxygen (c) d- orbitals available (d) ability to form pπ-pπ bonds with itself

13) An element belongs to group 15 and 3 rd period of the periodic table, its electronic configuration would be
(a) $1s^2\ 2s^2\ 2p^4$ (b) $1s^2\ 2s^2\ 2p^3$ (c) $1s^2\ 2s^2\ 2p^6\ 3s^2\ 3p^2$ (d) $1s^2\ 2s^2\ 2p^6\ 3s^2\ 3p^3$

14) Solid (A) reacts with strong aqueous NaOH liberating a foul smelling gas(B) which spontaneously burn in air giving smoky rings. A and B are respectively
(a) $P_4$(red) and $PH_3$ (b) $P_4$(white) and $PH_3$ (c) $S_8$ and $H_2S$ (d) $P_4$(white) and $H_2S$

15) In the brown ring test, brown colour of the ring is due to
(a) a mixture of No and $NO_2$ (b) Nitroso ferrous sulphate (c) Ferrous nitrate (d) Ferric nitra

16) Sc( Z=21) is a transition element but Zinc (z=30) is not becaus

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(a) both $Sc^{3+}$ and $Zn^{2+}$ ions are colourless and form white compounds (b) in case of Sc, 3d orbital are partially filled but in Zn these are completely filled (c) last electron as assumed to be added to 4s level in case of zinc (d) both Sc and Zn do not exhibit variable oxidation states

17) Which of the following d block element has half filled penultimate d sub shell as well as half filled valence sub shell?
(a) Cr (b) Pd (c) Pt (d) none of these

18) Among the transition metals of 3d series, the one that has highest negative ($\frac{M^{2+}}{M}$) standard electrode potential is
(a) Ti (b) Cu (c) Mn (d) Zn

19) Which one of the following ions has the same number of unpaired electrons as present in $V^{3+}$?
(a) $Ti^{3+}$ (b) $Fe^{3+}$ (c) $Ni^{2+}$ (d) $Cr^{3+}$

20) The magnetic moment of $Mn^{2+}$ ion is
(a) 5.92BM (b) 2.80BM (c) 8.95BM (d) 3.90BM

21) The sum of primary valance and secondary valance of the metal M in the complex $[M(en)_2(Ox)]Cl$ is$_L$
(a) 3 (b) 6 (c) -3 (d) 9

22) An excess of silver nitrate is added to 100ml of a 0.01M solution of pentaaquachloridochromium(III)chloride. The number of moles of AgCl precipitated would be
(a) 0.02 (b) 0.002 (c) 0.01 (d) 0.2

23) A complex has a molecular formula MSOCl. 6HO42.The aqueous solution of it gives white precipitate with Barium chloride solution and no precipitate is obtained when it is treated with silver nitrate solution. If the secondary valence of the metal is six, which one of the following correctly represents the complex?
(a) $[M(H2O)_4Cl]SO_42H_2O$ (b) $[M(H_2O)_6]SO_4$ (c) $[M(H_2O)_5Cl]SO_4H_2O$ (d) $[M(H_2O)_3Cl]SO_4.3H_2O$

24) Oxidation state of Iron and the charge on the ligand NO in $[Fe(H_2O)_5NO]SO_4$ are
(a) +2 and 0 respectively (b) +3 and 0 respectively (c) +3 and -1 respectively (d) +1 and +1 respectively

25) As per IUPAC guidelines, the name of the complex $[Co(en)_2(ONO)Cl]Cl$ is
(a) chlorobisethylenediaminenitritocobalt(III) chloride (b) chloridobis(ethane-1,2-diamine)nitro K-Ocobaltate(III) chloride (c) chloridobis(ethane-1,2-diammine)nitrito K-Ocobalt(II) chloridde (d) chloridobis(ethane-1,2-diamine)nitro K-Ocobalt(III) chloride

26) Graphite and diamond are
(a) Covalent and molecular crystals (b) ionic and covalent crystals (c) both covalent crystals (d) both molecular crystals

27) An ionic compound AxBy crystallizes in fcc type crystal structure with B ions at the centre of each face and A ion occupying entre of the cube. the correct formula of AxBy is
(a) AB (b) $AB_3$ (c) $A_3B$ (d) $A_8B_6$

28) The ratio of close packed atoms to tetrahedral hole in cubic packing is
(a) 1:1 (b) 1:2 (c) 2:1 (d) 1:4

29) Solid $CO_2$ is an example of
(a) Covalent solid (b) metallic solid (c) molecular solid (d) ionic solid

30) Assertion : monoclinic sulphur is an example of monoclinic crystal system
Reason: for a monoclinic system, $a$ - $b$ - $c$ and $\alpha = \gamma = 90^0, \beta$ - $90^0$
(a) Both assertion and reason are true and reason is the correct explanation of assertion (b) Both assertion and reason are true but reason is not the correct explanation of assertion. (c) Assertion is true but reason is false. (d) Both assertion and reason are false.

31) For a first order reaction A ⟶ B the rate constant is x $min^{-1}$. If the initial concentration of A is 0.01M , the concentration of A after one hour is given by the expression.
(a) 001. $e^{-x}$ (b) 1 x $10^{-2}(1-e^{-60x})$ (c) $(1x10^{-2})e^{-60x}$ (d) none of these

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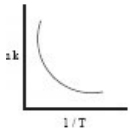
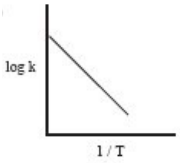
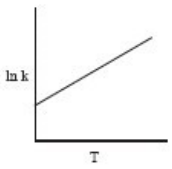
32) A zero order reaction X ⟶ XProduct, with an initial concentration 0.02M has a half life of 10 min. if one starts with concentration 0.04M, then the half life is

(a) 10 s (b) 5 min (c) 20 min (d) cannot be predicted using the given information

33) Among the following graphs showing variation of rate constant with temperature (T) for a reaction, the one that exhibits Arrhenius behavior over the entire temperature range is

(a) 


(b) 


(c) 


(d) both (b) and (c)

34) For a first order reaction A ⟶ product with initial concentration x mol $L^{-1}$, has a half life period of 2.5 hours. For the same reaction with initial concentration ($\frac{x}{2}$) mol L-1 the half life is

(a) (2.5 x 2) hours (b) ($\frac{2.5}{2}$) hours (c) 2.5 hours (d) Without knowing the rate constant, $t_{1/2}$ cannot be determined from the given data

35) For the reaction, $2NH_3 \longrightarrow N_2 + 3H_2$, if $\frac{-d[NH_3]}{dt}$ $=k_1[NH_3]$, $\frac{d[N_2]}{dt} = k_2[NH_3]$, $\frac{d[H_2]}{dt}$ $=k_3[NH_3]$ then the relation between $k_1$, $k_2$ and $k_3$ is

(a) $k_1=k_2=k_3$ (b) $k_1=3k_2=2k_3$ (c) $1.5k_1=3k_2=k_3$ (d) $2k_1=k_2=3k_3$

36) Concentration of the $Ag^+$ ions in a saturated solution of $Ag_2C_2O_4$ is $2.24 \times 10^{-4}$mol $L^{-1}$ solubility product of $Ag_2C_2O_4$ is

(a) $2.42 \times 10^{-8}mol^3L^{-3}$ (b) $2.66 \times 10^{-12}mol^3L^{-3}$ (c) $4.5 \times 10^{-11}mol^3L^{-3}$ (d) $5.619 \times 10^{-12}mol^3L^{-3}$

37) Following solutions were prepared by mixing different volumes of NAOH of HCL different concentrations

1) 60 ML $\frac{M}{10}$ HCL+40ML $\frac{M}{10}$ NaOH

2) 50 ML $\frac{M}{10}$ HCL+45ML $\frac{M}{10}$ NaOH

3) 75ML $\frac{M}{5}$ HCL+40ML $\frac{M}{5}$ NaOH

4) 100 ML $\frac{M}{10}$ HCL+100ML $\frac{M}{10}$ NaOH

pH of which one of them will be equal to 1?

(a) iv (b) i (c) ii (d) iii

38) The solubility of $BaSO_4$ in water is $2.42 \times 10^{-3}gL^{-1}$ at 298K. The value of its solubility product($K_{sp}$) will be (Given molar mass of $BaSO_4$ =233g mol $4^{-1}$)

(a) $1.08 \times 10^{-14}mol^2L^{-2}$ (b) $1.08 \times 10^{-12}mol^2L^{-2}$ (c) $1.08 \times 10^{-10}mol^2L^{-2}$ (d) $1.08 \times 10^{-8}mol^2L^{-2}$

39) pH of a saturated solution of $Ca(OH)_2$ is 9. The Solubility product ( $K_{sp}$) of $Ca(OH)^2$

(a) $0.5 \times 10^{-15}$ (b) $0.25 \times 10^{-10}$ (c) $0.125 \times 10^{-15}$ (d) $0.5 \times 10^{-10}$

40) Conjugate base for bronsted acids $H_2O$ and HF are

(a) $OH^-$ and $H_2FH^+$, respectively (b) $H_3O^+$ and F, respectively (c) $OH^-$ and $F^-$, respectively (d) $H_3O^+$ and $H_2F^+$, respectively

41) The number of electrons that have a total charge of 9650 coulombs is

(a) $6.22 \times 10^{23}$ (b) $6.022 \times 10^{24}$ (c) $6.022 \times 10^{22}$ (d) $6.022 \times 10^{-34}$

42) Consider the following half cell reactions.

$Mn^{2+} + 2e^{-} \rightarrow Mn$ $E^o = -1.18V$

$Mn^{2+} \rightarrow Mn^{3+} e^-$ $E^o = -1.51V$

The $E^o$ for the reaction $3Mn^{2+} \rightarrow Mn+2Mn^{3+}$, and the possibility of the forward reaction are respectively

(a) 2.69V and spontaneous (b) -2.69 and non spontaneous (c) 0.33V and Spontaneous (d) 4.18V and non spontaneous

43) The button cell used is watches function as follows

$Zn (s) + Ag_2O (s) + H_2O (l) \rightleftharpoons 2Ag (s) + Zn^{2+} (aq) + 2OH^-(aq)$the half cell potentials are $Ag_2 O (s) + H_2O (l) + 2e^- \rightarrow 2Ag (s) + 2OH^- (aq)$ $E^o$.34V The cell potential will be

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(a) 0.84V (b) 1.34V (c) 1.10V (d) 0.42V

44) The molar conductivity of a 0.5 mol $dm^{-3}$ solution of $AgNO_3$ with electrolytic conductivity of $5.76 \times 10^{-3}$ S $cm^{-1}$at 298 K is

(a) 2.88 S $cm^2mol^{-1}$ (b) 11.52 S $cm^2mol^{-1}$ (c) 0.086 S $cm^2mol^{-1}$ (d) 28.8 S $cm^2$ $mol^{-1}$

45)

| Electrolyte | KCl | $KNO_3$ | HCl | NaOAC | NaCl |
|---|---|---|---|---|---|
| $\Lambda^-$ ($Scm^2$ $mol^{-1}$) | 149.9 | 145.0 | 426.2 | 91.0 | 126.5 |

Calculate $\Lambda^o_{HoAC}$ using appropriate molar conductances of the electrolytes listed above at infinite dilution in water at 25°C.

(a) 517.2 (b) 552.7 (c) 390.7 (d) 217.5

46) For freudlich isotherm a graph of log $\frac{x}{m}$ is plotted against log P. The slope of the line and its y – axis intercept respectively corresponds to

(a) $\frac{1}{n}$ ,K (b) log$\frac{1}{n}$ ,K (c) $\frac{1}{n}$ ,logK (d) log $\frac{1}{n}$ ,log K

47) Which of the following is incorrect for physisorption?

(a) reversible (b) increases with increase in temperature (c) low heat of adsorption (d) increases with increase in surface area

48) Which one of the following characteristics are associated with adsorption?

(a) Δ G and Δ H are negative but Δ S is positive (b) Δ G and Δ S are negative but Δ H is positive (c) Δ G is negative but Δ H and Δ S are positive (d) Δ G,Δ H and Δ S all are negative.

49) Fog is colloidal solution 0 of

(a) solid in gas (b) gas in gas (c) liquid in gas (d) gas in liquid

50) Assertion : Coagulation power of $Al^{3+}$ is more than $Na^+$.

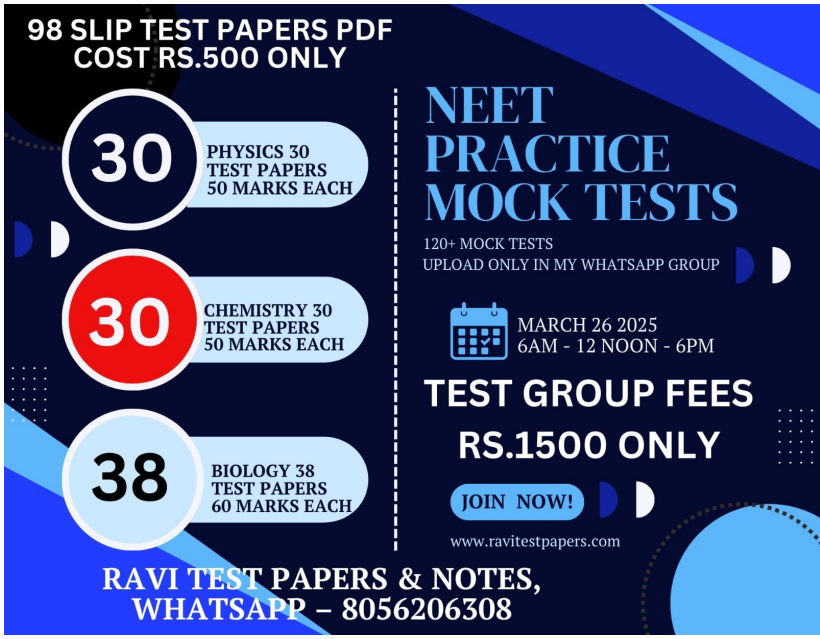
Reason : greater the valency of the flocculating ion added, greater is its power to cause precipitation

(a) if both assertion and reason are true and reason is the correct explanation of assertion. (b) if both assertion and reason are true but reason is not the correct explanation of assertion (c) assertion is true but reason is false (d) both assertion and reason are false

**********

50 x 1 = 50

1) (b) $Al_2O_3nH_2O$
2) (c) $SO_2$
3) (c) $MgCO_3 \rightarrow MgO + CO_2$
4) (b) $AL_2O_3$
5) (a) Al
6) (c) basic
7) (d) accepts OH- from water ,releasing proton.
8) (b) $B_3H_6$
9) (a) Aluminium
10) (c) four
11) (a) Nessler's reagent
12) (d) ability to form pπ-pπ bonds with itself
13) (d) $1s^2\ 2s^2\ 2p^6\ 3s^2\ 3p^3$
14) (b) $P_4$(white) and $PH_3$

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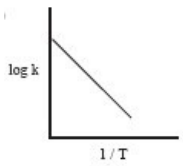
15)
(b) Nitroso ferrous sulphate
16)
(b) in case of Sc, 3d orbital are partially filled but in Zn these are completely filled
17)
(a) Cr
18)
(a) Ti
19)
(c) $Ni^{2+}$
20)
(a) 5.92BM
21)
(d) 9
22)
(b) 0.002
23)
(c) $[M(H_2O)_5Cl]SO_4H_2O$
24)
(c) +3 and -1 respectively
25)
(a) chlorobisethylenediaminenitritocobalt(III) chloride
26)
(c) both covalent crystals
27)
(b) $AB_3$
28)
(b) 1:2
29)
(c) molecular solid
30)
(a) Both assertion and reason are true and reason is the correct explanation of assertion
31)
(c) $(1x10^{-2})e^{-60x}$
32)
(c) 20 min
33)
(b)




34)
(d) Without knowing the rate constant, $t_{1/2}$ cannot be determined from the given data
35)
(c) $1.5k_1=3k_2=k_3$
36)
(d) $5.619 \times 10^{-12} mol^3L^{-3}$
37)
(d) iii
38)

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(c) $1.08 \times 10^{-10} mol^2 L^{-2}$

39)

(a) $0.5 \times 10^{-15}$

40)

(c) $OH^-$ and $F^-$, respectively

41)

(c) $6.022 \times 10^{22}$

42)

(b) -2.69 and non spontaneous

43)

(c) 1.10V

44)

(b) 11.52 S $cm^2 mol^{-1}$

45)

(c) 390.7

46)

(c) $\frac{1}{n}$ ,logK

47)

(b) increases with increase in temperature

48)

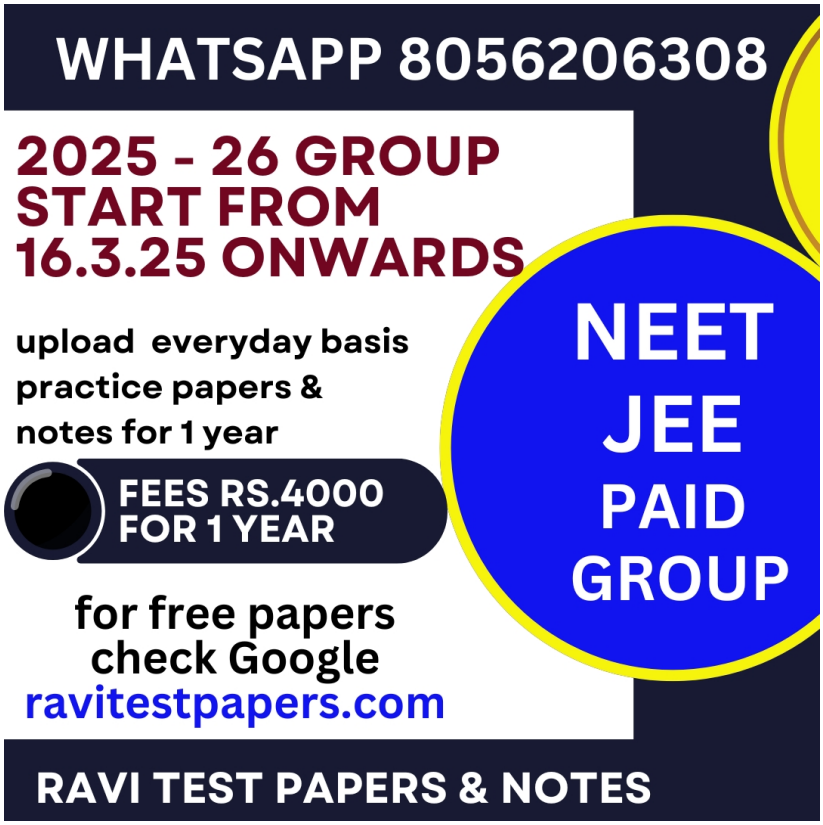
(d) $\Delta$ G,$\Delta$ H and $\Delta$ S all are negative.

49)

(a) solid in gas

50)

(a) if both assertion and reason are true and reason is the correct explanation of assertion.

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