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**Max Time : 3 hr** **Class = 11th Chemistry Max Marks : 70**

**Final Exam**

**Section – A [ 1 mark ]**

1. Calculate number of moles in 1.5 atoms of element ‘X’.
2. Write the unit of Molarity.
3. Identify the element ‘Y’. [49Y106]
4. Draw the shape of .
5. Find the oxidation state of ‘Pt’ in K4[Pt(CN)6].
6. Write relation between Kp and Kc.
7. Write IUPAC name of



1. Write electronic configuration of Fe3+.
2. Explain Lewis acids with example.
3. Identify ‘A’ and ‘B’ in the given reaction : 2 CH3Br + 2 Na B
4. Complete the reaction : CH3 – CH CH2 + HCl
5. Find Normality of 100 ml of 0.8 M H2SO4 solution.
6. Explain Isolated system.
7. Find the bond order of .
8. Calculate magnetic moment of Fe2+.
9. Which molecule / ion out of the following does not contain unpaired electrons ?

|  |  |  |  |
| --- | --- | --- | --- |
| a) | b) O2 | c) | d) B2 |

1. Among halogens, the correct order of amount of energy released in electron gain (electron gain enthalpy) is :

|  |  |  |  |
| --- | --- | --- | --- |
| a) F > Cl > Br > I | b) F > Cl < Br > I | c) F < Cl > Br > I | d) F < Cl < Br < I |

1. Which of the following angle corresponds to sp2 hybridization ?

|  |  |  |  |
| --- | --- | --- | --- |
| a) 90˚ | b) 120˚ | c) 180˚ | d) 109˚ |

1. A metal ion M3+ loses 3 electrons, its oxidation number will be

|  |  |  |  |
| --- | --- | --- | --- |
| a) + 3 | b) + 6 | c) 0 | d) – 3 |

1. The correct order of decreasing first ionization energy is

|  |  |  |  |
| --- | --- | --- | --- |
| a) C > B > Be > Li | b) C > Be > B > Li | c) B > C > Be > Li | d) Be > Li > B > C |

**Section – B [ 2 marks ]**

1. Calculate number of atoms present in 11 gm of CO2.
2. Explain open and isolated system.
3. How many molecules of water are present in 1.8 ml of water at 298 K.
4. Explain Molarity and Molality.

Or

Calculate Molarity of 10 % aq solution of NaOH, density of solution is 1.2 g/ml.

1. Arrange the following in increasing order of Bond order : O2 , ,
2. Compare Ionisation energy of the following : (i) Be and B (ii) Mg and Al
3. Complete the given reaction : CH3 – CH CH – CH3

**Section – C [ 3 marks ]**

1. 10 g of argon is compressed isothermally and reversibly at a temperature of 27˚C from 10 L to 5 L. Calculate q , w , E and H for this process.
2. The pH of a solution obtained by dissolving 0.1 mole of an acid HA in 100 mL of the aqueous solution was found to be 3. Calculate the dissociation constant of the acid.

Or

The solubility product of AgCl in water is 1.5 x 10 – 10. Calculate its solubility in 0.01 M NaCl aqueous solution.

1. Draw the structure of cis and trans isomers of the following compounds. Also write their IUPAC names:

(i) CHCl CHCl (ii) C2H5C(CH3) C(CH3)C2H5

1. Compare the relative stabilities of the following species & indicates their magnetic properties.

C2 , ,

1. Write complete balanced equation for the following :

a) N2O4 + + Br – (acidic medium)

b) + + MnO2 + H2O (Basic medium)

1. Arrange the following :

(i) Increasing strength of hydrogen bonding (X – H – X): O , S , F ,Cl , N

(ii) In the decreasing order of the O – O bond length present in them : O2 , KO2 and O2[AsF4].

1. Ferrous sulphate heptahydrate is used to fortify food with iron. Calculate the amount (in grams) of the salt required to achieve 10 ppm of iron in 100 kg of wheat.

**Section – D [ 5 marks ]**

1. (a) The difference in the oxidation numbers of the two types of sulphur atoms in Na2S4O6 is ?

(b) Write IUPAC name of the following : (i) CH3 – CH CH – CH2 – C C – CH2 – CHO

(ii)  (iii) 

1. (a) Give the structures of the major organic products from 3-ethyl-2-pentene under each of the following reactions conditions : (i) HBr in the presence of peroxide (ii) Br2/H2O

(b) How would you distinguish between cyclohexane and cyclohexene?

1. (a) Would you except the second electron gain enthalpy of O as positive, more negative or less negative than the first? Justify your answer.

(b) Define (i) Orbital (ii) Node.

(c) Draw the shapes of and .

Or

Complete the reaction:

