Model Question Paper

CLASS : XI **MARKS : 70**

SUBJECT : CHEMISTRY **TIME : 3.00 HRS**

PART-A

CHOOSE THE BEST ANSWER **15 X 1 = 15**

1. Splitting of spectral lines in an electric field is called
   a) Zeeman effect b) Shielding effect c) Compton effect d) Stark effect
2. In a given shell the order of screening effect is
   a) s > p > d > f b) s > p > f > d c) f > d > p > s d) f > p > s > d
3. The temperatures at which real gases obey the ideal gas laws over a wide range of pressure is called
   a) Critical temperature b) Boyle temperature
   c) Inversion temperature d) Reduced temperature
4. Solubility of carbon dioxide gas in cold water can be increased by
   a) increase in pressure b) decrease in pressure
   c) increase in volume d) none of these
5. The suspension of slaked lime in water is known as
   a) lime water b) quick lime
   c) milk of lime d) aqueous solution of slaked lime
6. According to Raoults law, the relative lowering of vapour pressure for a solution is equal to
   a) mole fraction of solvent b) mole fraction of solute
   c) number of moles of solute d) number of moles of solvent
7. Which one of the following shows functional isomerism?
   a) ethylene b) Propane c) ethanol d) CH2Cl2
8. Hyper Conjugation is also known as
   a) no bond resonance b) Baker - nathan effect
   c) both (a)and (b) d) none of these
9. reacts with nitric acid to produce
   a) nitro toluene b) nitro glycerine c) chloropicrin d) chloropicric acid
10. Haemoglobin of the blood forms carboxy haemoglobin with
    a) Carbon dioxide b) Carbon tetra chloride c) Carbon monoxide d) Carbonic acid
11. The oxidation number of carbon in CH_2F_2 is _____
    a) +4 b) -4 c) 0 d)+2
12. Tritium is a _____emitter
    a) α b) β c) γ d) none of these
13. The SI unit of molar heat capacity is : _____
    a) JK^{-1} mol^{-1} b) KJ mol^{-1} c) Kj mol^{-1} d) cm

14. .Cold dilute alkaline $KMnO_4$ is known as _____

a) Schiff"s reagent b) Fenton"s reagent

c) Tollen's reagent d) Baeyer's reagent

15. .Match the following

1) N_2 molecule	i) chemical bond
2) BF_3 molecule	ii) Trible covalent bond
3) HF molecule	iii) Electron deficient molecule
4) NaCl	iv) polar covalent bond

a) 1)- iii) , 2)- i) , 3)-iv) , 4)- ii) b) 1)-ii) , 2)- iv) , 3)-i) , 4)- iii)

c) 1)- i) , 2)- iv) , 3)- ii) , 4)- iii) d) 1)- ii) , 2)-iii) , 3)- iv) , 4)- i)

PART-B

Answer the following any six questions **6 X 2 = 12**

Note : question no : 24 is compulsory

16. A compound having the empirical formula C_6H_6O has the vapour density 47. Find its molecular formula.
17. Give the electronic configuration of Mn^{2+} and Cr^{3+}
18. Write the uses of magnesium ?
19. Name the different methods of liquefaction of gases
20. state zeroth Law of Thermodynamics
21. Write the structure of the following compounds.

A) NH_3 B) BF_3

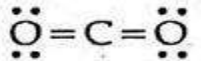
22. What is meant by homologous series ?
23. What happens when acetylene undergoes ozonolysis ?
24. What is green chemistry ?

PART-C

Answer the following any six questions **6 X 3 = 18**

Note : question no : 33 is compulsory

25. What is meant by limiting reagents ?
26. Write the exchange reactions of Deuterium
27. Explain diagonal relationship
28. Explain homogeneous and heterogeneous equilibria
29. How will you determine the molar mass of a solute from osmotic pressure ?
30. Calculate the formal charge on carbon and oxygen for the following structure



31. How do you detect the presence of nitrogen and sulphur together in an organic compounds ?
32. Write the no bond resonance structure shown by propene ?
33. . Starting from CH_3MgI , how will you prepare the following ?

i) Acetaldehyde ii) Acetone

PART-D

ANSWER ALL THE QUESTIONS **5 X 5 = 25**

34. a) i) Define Gram equivalent mass(2)

ii) state and explaine pauli's exclusion principle. (3)

(OR)

b) i) How do you convert para hydrogen into ortho hydrogen (3)

ii) Write any two similarities between beryllium and aluminium(2)

35. a) i) State Heisenber's Uncertainty Principle (3)

ii) Define electron affinity(2)

(OR)

b) i) Distinguish between diffusion and effusion. (3)

ii) Give any two characteristics of gibbs free energy ? (2)

36. a) i) What is the relation between K_P and K_C ? Give one example for which K_P is equal to K_C (2)

ii) What is vpour pressure of a liquid?what is relative lowering of vapour pressurea?(3)

(OR)

b) i) Give the shapes of molecules predicted by VSEPR theory (3)

a) $BeCl_2$ b) NH_3 c) H_2O

ii) Explain sign convention of work(2)

37. a) i) Give any two differences between nucleophiles and electrophiles (2)

ii) How will you get the following products with the given reactants ? (3)

A)Acetylene → Benzene

B)Phenol → Benzene

(OR)

b) Simplest alkene (A) rects with HBr to form compound (B). Compound (B) reacts with ammonia to from compound (C) of molecular formula C_2H_7N. Compound (C) undergoes carbylamines test. Identify (A), (B) and (C). (5)

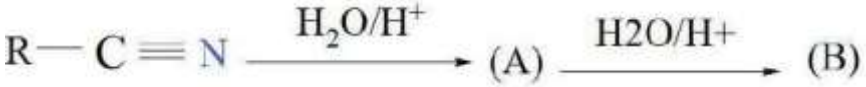
38. a) i) explain a suitable method for purifying and separating liquids present in a mixture having very close boiling point. (3)

ii) Give any two difference between the BOD and COD (2)

(OR)

b) i) If an automobile engine burns petrol at a temperature of 1089 K and if the surrounding temperature is 294 K , calculate its maximum possible efficiency .(3)

ii) complete the following reaction (2)



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