CLASS : XII **TIME : 3.00 hrs**
SUBJECT : CHEMISTRY **UNIT TEST-3,5,10,13** **MARKS : 70**

PART-I

CHOOSE THE CORRECT ANSWER : **15 X 1 = 15**

1. Assertion : Acetamide on reaction with KOH and bromine gives acetic acid
   Reason : Bromine catalyses hydrolysis of acetamide.
   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.
2. Secondary nitro alkanes react with nitrous acid to form
   a) red solution b) blue solution c) green solution d) yellow solution
3. Nitrobenzene on reaction with at 80-100°C forms which one of the following products?
   a) 1,4 – dinitrobenzene b) 2,4,6 – tirnitrobenzene
   c) 1,2 – dinitrobenzene d) 1,3 – dinitrobenzene
4. Adsorption of a gas on solid metal surface is spontaneous and exothermic, then
   a) ΔH increases b) ΔS increases c) ΔG increases d) ΔS decreases
5. Which one of the following is an example for homogeneous catalysis?
   a) manufacture of ammonia by Haber's process
   b) manufacture of sulphuric acid by contact process
   c) hydrogenation of oil
   d) Hydrolysis of sucrose in presence of all HCl
6. The phenomenon observed when a beam of light is passed through a colloidal solution is
   a) Cataphoresis b) Electrophoresis c) Coagulation d) Tyndall effect
7. IUPAC name of the complex $K_3[\ Al(C_2O_4)_3\ ]$ is
   a) Potassium trisoxalato aluminate (III) b) Potassium trisoxalato aluminium (III)
   c) Potassium trioxalato aluminate (III) d) Potassium trioxalato aluminate (II)
8. A magnetic moment of 1.73 BM will be show by one among the following
   (a) $[CoCl_6]^{4-}$ (b) $TiCl_4$ (c) $[Cu(NH_3)_4]^{2+}$ (d) $[Ni(CN)_4]^{2-}$
9. A complex in which the oxidation number of the metal is zero is
   a) $K_4[Fe(CN)_6]$ b) $[Fe(CN)_3(NH_3)_3]$ c) $[Fe(CO)_5]$ d) both b and c
10. Most easily liquefiable gas is
    a) Ar b) Ne c) He d) Kr
11. Which of the following is strongest acid among all?
    a) HI b) HF c) HBr d) HCl
12. XeF_6 on complete hydrolysis produces
    a) $XeOF_4$ b) XeO_2F_2 c) XeO_3 d) XeO_2
13. The structure of $[Fe_2(CO)_9]$ consist of ____bridging CO ligands , ____ terminal CO group
    a) three & two b) three & six c) two & six d) six & three

$$CH_3-CN \xrightarrow[4[H]]{Na(Hg)/C_2H_5OH} CH_3CH_2-NH_2$$

ethanenitrile ethanamine

14.

The above reaction is :

a) Thorpe nitrile condensation b) Levine and Hauser acetylation

c) mendius reaction d) Aldol condensation

15.The iron catalyst used in the Haber's process is poisoned by _____

a) Pt b) H_2 c) H_2S d) As_2O_3

PART-II

ANSWER THE FOLLOWING ANY SIX QUESTIONS. 6 X 2 = 12

COMPULSORY QUESTION NO : 24

16. What is crystal field stabilization energy (CFSE) ?
17. what are the limitation of VB theory ?
18. What do you mean by helmholtz electrical double layer?
19. Write short note on catalytic poison ?
20. Write a note on Mustard oil reaction
21. Aniline does not undergo friedel crafts reaction give reason
22. Give the uses of helium
23. What is the hybridisation of iodine in IF_7? Give its structure
24. Write the following for the complex $[Co(en)_2Cl_2]Cl$

a) ligand b) central metal ion c) IUPAC name

PART-III

ANSWER THE FOLLOWING ANY SIX QUESTIONS. 6 X 3 = 18

COMPULSORY QUESTION .NO : 33

25. Explain the bonding nature in metal carbonyl
26. Give the difference between double salt and coordination compound
27. What is mean by electro osmosis?
28. i) What is homogeneous catalysis ? Give example

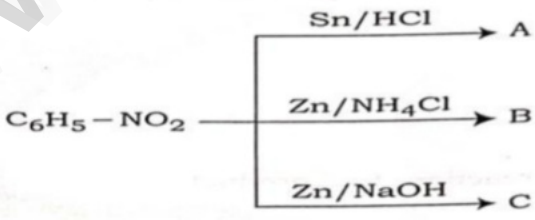
ii) What is heterogeneous catalysis ? Give example

29. write short note on Gabriel phthalimide synthesis
30. Write short notes on the following

i) diazotiaton reaction

ii) Hoffman's degradation reaction

31. explain the Deacons's process for manufacture of chlorine
32. Explain the dehydrating property of sulphuric acid with suitable example
33. Identify compounds A,B and C for the following



PART-IV

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

34.a) i) write the postulates of werner's theory ?(3)

ii) Define Coordination number(2)

(OR)

b) based on the VB theory ,explain why$[Ni(CN)_4]^{2-}$ it is diamagnetic. (5)

35. a) i) give the three difference between chemisorption and physisorption(3)

ii) Write a note on tyndall effect (2)

(OR)

b) Explain intermediate compound formation theory of catalysis with an example(5)

36. a) How will you distinguish between primary, secondary and tertiary aliphatic amines(5)

(OR)

b) Write a note on**(2 ½ + 2 ½)**

i) Bromination of aniline ii) carbylamine reaction

37. a) i) What are inter halogen compounds ? give example (2)

ii) In an octahedral crystal field draw the figure to show splitting of d orbitals (3)

(OR)

b) Write the balanced equation for the overall reaction of chlorine with cold NaOH and hot NaOH(5)

38. a) Write any five characters of catalysts ? (5)

(OR)

b) write the postulates of VB theory ? (5)

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