Class : 12

Register Number

FIRST REVISION EXAMINATION, JANUARY - 2024

Time Allowed : 3.00 Hours] **CHEMISTRY** [Max. Marks : 70

PART – A

I. Choose the correct answer. **15x1=15**

1. The metal oxide which cannot be reduced to metal by Carbon is
   a) Pbo b) Al_2O_3 c) ZnO d) FeO
2. --------- isotope is used as a moderator in nuclear reactor.
   a) $_5B^{10}$ b) $_{31}Ga^{69}$ c) $_5B^{11}$ d) $_{31}Ga^{70}$
3. **Assertion** : Bond dissociation energy of fluorine is greater than chlorine gas.
   Reason : Chlorine has more electronegative repulsion than fluorine.
   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.
4. Which one of the following ion is Paramagnetic?
   a) Sc^{3+} b) Ti^{4+} c) V^{5+} d) Ti^{3+}
5. How many Geometrical isomers are possible for [Pt (Py) (NH_3) (Br) (Cl)]?
   a) 3 b) 4 c) 0 d) 15
6. Solid CO_2 is an example of
   a) Covalent solid b) Metallic solid c) Molecular solid d) Ionic solid
7. After 2 hours, a radioactive substance becomes $(^1/_{16})^{th}$ of original amount. Then the half life (in min) is
   a) 60 minutes b) 120 minutes c) 30 minutes d) 15 minutes
8. Our blood contains ------- buffer solution.
   a) H_2CO_3 and CO_3^{2-} b) H_2CO_3 and HCO_3^- c) H_2SO_4 and HSO_4^- d) H_2SO_4 and SO_4^-
9. During the electrolysis of molten sodium chloride the time required to produce 0.10 mol of chlorine gas using a current of 3 ampere is
   a) 55 minutes b) 107.2 minutes c) 220 minutes d) 330 minutes
10. Which enzyme present in soyabeans hydrolysis urea?
    a) Urease b) Zymase c) Invertase d) Diastase
11. Williamson synthesis of preparing dimethyl ether is a
    a) SN_1 reactions b) SN_2 reactions
    c) Electrophilic addation d) Electrophilic substitution
12. Which one of the following undergoes reaction with 50% sodium hydroxide solution to give the corresponding alcohol and acid
    a) Phenylmethanal b) Ethanal c) Ethanol d) Methanol
13. When aniline reacts with acetic anhydride, the product formed is
    a) O - amino acetophenone b) m - aminoacetophenone
    c) P - amino acetophenone d) acetanilide
14. Vitamin B_{12} is also known as ---------
    a) Riboflavin b) Thiamine c) Cobalamine d) Ascorbic acid
15. Which metal is used for the preparation of Buna-N and Buna - S rubber?
    a) Potassium b) Sodium c) Calcium d) Magnesium

PART - B

II. Answer any six questions of the following. Question No. 24 is compulsory. **6x2=12**

16. What is Roasting? Given an example.
17. Write about orthosilicates.
18. Transition metals form coordination complex. Why?

19. Differentiate Isotropy and Anisotropy?
20. What is peptisation?
21. Explain schotten-Baumann reaction?
22. What is formalin? Mention its use.
23. Which sweetening agents are used to prepare sweets for a diabetic patient?
24. Calculate the molar conductance of 0.01 M aqueous KCl solution at 25°C. The specific conductance of KCl at 25°C is 14.114×10^{-2} Sm^{-1}?

PART - C

III Answer any six questions of the following. Question No. 33 is compulsory. **6x3=18**

25. Give the uses of Helium?
26. Write a short note on Hydroboration?
27. Write the formula for the following coordination compounds.
    a) Pentacarbonyliron (0)
    b) Hexaammine Cobalt (III) Sulphate
    c) Potassium Hexa Cyanidoferrate (II)
28. Give the differences between Order and Molecularity of a reaction.
29. Derive the relationship between P^H and P^{OH}?
30. Write a note on standard hydrogen electrode?
31. How will you convert phenol into the following compounds?
    i) Aniline ii) Picric acid
32. Write a note on denaturation of Proteins?
33. Identify A, B and C

$$C_6H_5NO_2 \xrightarrow{Fe/HCl} (A) \xrightarrow{HNO_2/273K} (B) \xrightarrow{C_6H_5OH} (C)$$

PART - D

IV Answer all the questions. **5x5=25**

34. (a) (i) What is blister copper? (2)
    (ii) Explain Aluminothermic Process. (3)

(OR)

    (b) i) Write about Morfee Process. (2)
    ii) What are Inter Halogen Compounds? Give example. (3)

35. (a) i) $KMnO_4$ is a strong Oxidising agent. Justify? (2)
    ii) Compare Lanthanoids and Actinoids. (3)

(OR)

    (b) Explain Ionisation isomerism and solvate isomerism. (5)

36. (a) Calculate the percentage efficiency of packing in case of a Body centred cubic crystal? (5)

(OR)

    (b) i) Write the limitations of Arrhenius concept of acids and bases. (2)
    ii) Differentiate physisorption and chemisorption. (3)

37. (a) Explain briefly the collision theory of bimolecular reaction. (5)

(OR)

    (b) i) Write a note on williamson ether synthesis? (2)
    ii) What is transesterification? (3)

38. (a) i) How will you identify primary amine? (2)
    ii) There are two isomers with the molecular formula CH_3NO_2. How will you distinguish between them? (3)

(OR)

    (b) i) What are the functions of lipids in living organisms? (2)
    ii) Write a note on Vulcanization of rubber? (3)