QUARTERLY EXAMINATION - 2024

CLASS : 12

CHEMISTRY

Time : 3.00 Hours

Reg.No

Total Marks : 70

I) Answer all the questions:

15x1=15

1. Wolframite ore is separated from tinstone by the process of
   a) Smelting   b) Calcination   c) Roasting   d) Electromagnetic separation

2. Which of these is not a monomer for a high molecular mass silicone polymer?
   a) Me_3SiCl b) $PhSiCl_3$ c) $MeSiCl_3$ d) Me_2SiCl_2

3. P_4O_6 reacts with cold water to give
   a) H_3PO_3 b) $H_4P_2O_7$ c) HPO_3 d) H_3PO_4

4. In acidic medium, Potassium permanganate oxidizes oxalic acid to
   a) Oxalate   b) Carbon dioxide   c) acetate   d) acetic acid

5. Potassium has a bcc structure with nearest neighbour distance $4.52A^0$ Its atomic weight is 39. Its density will be
   a) 915 kgm^{-3} b) 2142 kgm^{-3} c) 452 kgm^{-3} d) 390 kgm^{-3}

6. If the Intial concentration of the reactent is doubled, the time for half reaction is also doubled. Then the order of the reaction is
   a) Zero   b) one   c) Fraction   d) none

7. For the reaction $2A+B \rightarrow 3C+D$ which of the following does not express the reaction rate
   a) $\dfrac{d[D]}{dt}$ b) $-\dfrac{d[A]}{2dt}$ c) $-\dfrac{d[C]}{3dt}$ d) $-\dfrac{d[B]}{dt}$

8. Equal volumes of three acid solutions of P^H 1,2 and 3 are mixed in a vessel. What will be the H^+ ion concentration in the mixture?
   a) 3.7×10^{-2} b) 10^{-6} c) 0.111   d) None of these

9. Asseration : Tertiary alcohols undergo dehydration more readily than primary alcohol
   Reason : Tertiary alcohols are less acidic than primary alcohols
   a) Both assertion and reason are true and reason is the correct explanetion of assertion
   b) Both assertion and reason are true and reason is not the correct explenation of assertion
   c) Assertion is true but reason is false   d) Both assertion and reason are false

10. $HO-CH_2-CH_2-OH$ on heating with Periodic acid gives
    a) methanol   b) ethanol   c) Methanal   d) CO_2

11. The IUPAC name of
    a) but-3-enoic acid
    b) but-1-ene-4-oic acid
    c) but-2-ene-1-oic acid
    d) but-3-ene-1-oic acid

12. Which one of the following pairs is not correctly Matched :

Reducing agent	Name of the reaction
a) Zn /Hg/ConHCl	Clemension redution
b) $LiAlH_4$	wolf -kisher's reduction
c) Pd /$BaSO_4$	Rosenmund's reduction
d) $SnCl_2$ / Con HCl	Stephen's reduction

13. The oxidation state of chlorine in Cl_2O_7 is
    a) +6   b) +7   c) +4   d) +5

14. Reason of Lanthanoid contraction is
    a) Increasing nuclear charge
    b) decreasing nuclear charge
    c) Imperfect shilding effect of 4f orbitals
    d) both (a) & (c)

15. In diboarane, the number of electrons that account for banana bonds is
    a) six   b) two   c) four   d) three

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II) Note : Answer any six questions. Q.No.24 compulsory.   6x2=12

16. Give the basic requirement for vapour phase refining

17. CO is a reducing agent, justify with an example.

18. What are interhalogen compounds? Give example.

19. Why d-block elements form co-ordination complexes?

20. Define unit cell.

21. Identify the order for the following reaction.

    i) Rusting of Iron   b) Radio active disintegration of $_{92}U^{238}$

22. Write the limitation of Arrhenius concept

23. Write Benzoin condensation

24. Alchols having higher boiling point than aldehydes, alkanes and ethers of comparable molecular masses. why?

III) Note : Answer any six questions. Q.No.33 Compulsory .   6x3=18

25. Give the limitations of Ellingham diagram.

26. Explain McAfee process of preparation of $AlCl_3$

27. Write the use of $KMnO_4$.

28. Write short note on Frenkel defect.

29. Derive intergrated rate law for a zero order reaction $A \rightarrow$ products.

30. Distinguish Lewis acid and Lewis bases.

31. What is TNG? How it is prepared?

32. Write the test for carboxilic acids.

33. Write the molecular formula and draw the structure of sulphurous acid and Marshall's acid.

IV) Note : Answer all the questions.   5x5=25

34. a) Explain froth flotation process.   **(OR)**

    b) i) How will you prepare inorganic benzene?   (2)

       ii) Write uses of silicones. .   (3)

35. a) i) How bleaching powder is prepared?   (2)

       ii) Write a short note on Holmes signal.   **(OR)**   (3)

    b) Describe the preparation of potassium dichromate

36. a) Calculate the percentage efficiency of packing in case of simple cubic crystal.**(OR)**

    b) Define half life of a reaction. Show that for a first order reaction half life is independent of initial concentraction.

37. a) Derive Henderson equation   **(OR)**

    b) An organic compound (A) molecular formula (C_2H_6O) react with con H_2SO_4 at 443K to give compound (B) react with Bayer's reagent to give compound (C) moleular formula $(C_2H_6O_2)$. Identify (A) , (B) and (C) and write the equation.

38. a) Explain Saytzeff's rule with example.   **(OR)**

    b) Explain Cannizaro reaction mechanhanism.

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