

SECOND REVISION TEST -2023

CHEMISTRY

Time:3.00hrs

Max.Marks:70

PART-1

15X1=15

I ANSWER ALL THE QUESTION

II CHOOSE THE MOST APPROPRIATE ANSWER FROM THE GIVEN FOUR ALTERNATIVE AND WRITE THE OPTION CODE AND THE CORRESPONDING ANSWER

1. Which of the following reduction is not thermodynamically possible?

- a) $\text{Cr}_2\text{O}_3 + \text{Al} \rightarrow \text{Al}_2\text{O}_3 + 2\text{Cr}$
- b) $\text{Al}_2\text{O}_3 + 2\text{Cr} \rightarrow \text{Cr}_2\text{O}_3 + 2\text{Al}$
- c) $3 \text{TiO}_2 + 4\text{Al} \rightarrow 2\text{Al}_2\text{O}_3 + 3 \text{Ti}$
- d) none of these

2. Which one of the following have honey comb crystal lattice structure?

- a) carbon nano tubes
- b) Fullerenes
- c) graphene
- d) diamond

3. Match the following (Nitrogen oxidation number)

- | | |
|-------------------------------------|---------|
| a) $\text{H}_2\text{N}_2\text{O}_2$ | i) +3 |
| b) HNO_2 | ii) +5 |
| c) HNO_3 | iii) +7 |
| d) HNO_4 | iv) +1 |

- | | A | B | C | D |
|----|-------|-------|-------|-------|
| a) | (iv) | (i) | (ii) | (iii) |
| b) | (i) | (ii) | (iii) | (iv) |
| c) | (ii) | (iii) | (iv) | (i) |
| d) | (iii) | (iv) | (i) | (ii) |

4. In acid medium, potassium permanganate oxidizes oxalic acid to

- a) oxalate
- b) carbon di oxide
- c) acetate
- d) acetic acid

5. An example for double salt

- a) FeSO_4
- b) $\text{FeSO}_4 \cdot (\text{NH}_4)_2\text{SO}_4 \cdot 6\text{H}_2\text{O}$
- c) $[\text{K}_4\text{Fe}(\text{CN})_6]$
- d) $\text{K}_2\text{SO}_4 \cdot 2\text{H}_2\text{O}$

6. Potassium has bcc structure with nearest neighbor distance 4.52\AA . Its atomic weight is 39.

Its density will be

- a) 915Kg m^{-3}
- b) 2142Kg m^{-3}
- c) 452Kg m^{-3}
- d) 390Kg m^{-3}

7. The half life period of a radio active element is 140 days .After 560 days ,1g of element will be reduce to

a)(1/2)g b)(1/4)g c) (1/8)g d) (1/16) g

8.Which of the following can act as lowery -bronsted acid as well as base?

a) HPO_4^{2-} b) Hcl c) Br^- d) SO_4^{2-}

9.A solution of 0.10M of a weak electrolyte is found to be dissociated to the extent of 1.20% at 25°C the dissociation constant of the acid is

a) 1.44×10^{-5} b) 2.88×10^{-5} c) 1.85×10^{-4} d) 1.69×10^{-7}

10.Which of the following is correctly matched?

a) Liquid Aerosol	i) Smoke
b) Foam	ii) Fog
c) Gel	iii) Pumice stone
d) Solid sol	iv) pearls

11.Iso propyl benzene on air oxidation in the presence of dilute acid gives

a) $\text{C}_6\text{H}_5\text{COOH}$ b) $\text{C}_6\text{H}_5\text{COCH}_3$ c) $\text{C}_6\text{H}_5\text{CO C}_6\text{H}_5$ d) $\text{C}_6\text{H}_5\text{-OH}$

12.In which of the following reaction new carbon -carbon bond is not formed?

a) Aldol condensation b) Friedel Craft reaction c) Kolbe's reaction d) Wolf Kishner reaction

13.Which of the following Amines does not undergo acetylation?

a) t-butylamine b) ethylamine c) diethylamine d) triethylamine

14. Which of the following vitamins water soluble?

a) Vitamin E b) Vitamin K c) Vitamin A d) Vitamin B

15.A mixture of Chloroxylenol and terpinacol act as -----

a) antiseptic b) anti pyretic c) antibiotic d) analgesic

PART-II

6X2=12

Answer any six question.Question NO:24 is compulsory

16.Explain acid leaching with suitable an example?

17.How will you identify the presence of borate?

18.Write short note on Holmes signals.

19.Write IUPAC name of the following compound

i) $[\text{Cu}(\text{NH}_3)_4] \text{SO}_4$ ii) $[\text{FeF}_6]^{4-}$

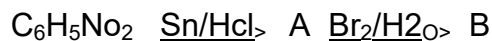
20. The rate constant for first order reaction is $1.54 \times 10^{-3} \text{S}^{-1}$ calculate its half life time.

21.State Faraday's Second law of Electrolysis.

22.How is Phenol prepared from choloro benzene.

23. Write a note on Co-polymer.

24. Identify A and B



PART-III

6X3=18

Answer any six question .Question No:33 compulsory

25. Describe a method for refining Nickel.

26. Write uses of Silicones.

27. How will you prepared bleaching powder?

28. Write a short notes on Interstitial compounds?

29. Write short note on Schottky defect.

30. Derive Henderson-Hasselbalch equation.

31. What is Urotrophine? How will you prepared?

32. Write short note on electro-osmosis

33. Write a short note on reducing power of formic acid.

PART-IV

5X5=25

Answer all question

34.a) i) Explain the Electro metallurgy of aluminium

ii) Write the uses of Borax

OR

b) i) How will you prepare chlorine in the laboratory?

ii) Give the uses of helium.

35.a) i) What is lanthanoid contraction? write causes and consequences of lanthanide contraction.

OR

b) i) A solution of $[Ni(H_2O)_6]^{2+}$ is green whereas a solution of $[Ni(CN)_4]^{2-}$ is colourless - Explain.

ii) What are the limitations of V B theory.

36.a) i) Calculate the percentage efficiency of packing in case of bcc crystal

ii) Why ionic crystals are hard and brittle?

OR

b) i) Give the difference between order and molecularity of a reaction.

ii) Calculate pH of 10^{-7} M HCl

37.a)i)Derive an expression for Nernst equation?

ii)What is promoters? Give example

OR

b)i)How colloids are prepared by condensation method?

ii) What are hormones ? Give example.

38.a)i) Explain the following reaction.

1.Reimer-Tiemann reaction

2.Carbylamine reaction.

3.knoerenagal reaction.

OR

b)i) Give any 3 difference between DNA and RNA.

ii) Write a note on Terylene.