

Padasalai.Net's Centum Special Question Paper 2022-2023

STD: XII

Max Marks: 70

SUB: Chemistry

Time : 3 hrs.

PART – I**15 × 1 = 15**

Note: Answer all the questions. Each question carries one mark.

- According to Ellingham diagram, the oxidation reaction of carbon to carbon monoxide may be used to reduce which of the following oxides at lowest temperature?
 - Al_2O_3
 - Cu_2O
 - MgO
 - ZnO
- On hydrolysis BF_3 gives Boric acid and converted to fluoroboric acid. The fluoroboric acid contains _____ species.
 - H^+, F^- & BF_3
 - H^+ & $[BF_4^-]$
 - $[HBF_3]^+, F^-$
 - H^+, B^{3+} & F^-
- The correct order of Acid strength is
 - $HF > HCl > HBr > HI$
 - $HF < HCl < HBr < HI$
 - $HF > HCl < HBr > HI$
 - $HF < HCl > HBr < HI$
- Which one of the following ions has the same number of unpaired electrons as present in V^{3+} ?
 - Ti^{3+}
 - Fe^{3+}
 - Ni^{2+}
 - Cr^{3+}
- Among the following complexes, which one show zero Crystal Field Stabilization Energy?
 - $[Mn(H_2O)_3]^{3+}$
 - $[Fe(H_2O)_6]^{3+}$
 - $[Co(H_2O)_6]^{2+}$
 - $[Co(H_2O)_6]^{3+}$
- The vacant space in bcc lattice unit cell is
 - 48%
 - 23%
 - 32%
 - 26%
- The half life period of a first order reaction is 5 minutes, the time required for 99.9% completion is nearly equal to
 - 99.9 min
 - 49.95 min
 - 50 min
 - 10 min
- Which of the following salts do not undergo salt hydrolysis?
 - Sodium acetate
 - Ammonium acetate
 - Ammonium Chloride
 - Sodium nitrate
- Assertion (A): A small piece of Zinc dissolved in dil. HNO_3 does not evolve Hydrogen gas.
Reason (R): HNO_3 is an oxidising agent and this oxidises hydrogen.
 - Both (A) and (R) are true and (R) is the correct explanation for (A).
 - Both (A) and (R) are true but (R) is not the correct explanation for (A).
 - (A) is true but (R) is false.
 - Both (A) and (R) are false.

10. For w/o emulsion, the principle emulsifying agent is
- a) Proteins b) Synthetic soaps
 c) lampblack d) gums
11. Which one of the following is the strongest acid?
- a) 2-nitrophenol b) 4-chlorophenol
 c) 4-nitrophenol d) 3-nitrophenol
12. When Fehling's solution is added to an aldehyde, the colour changes from
- a) Red to blue b) Blue to Red
 c) Red to green d) Green to blue
13. Net carbonyl synthesis is given by
- a) C_6H_5CHO b) $CH_3 - \overset{CH_3}{\underset{CH_3}{C}} - NO_2$
 c) $C_6H_5CH_2NO_2$ d) All of these

14. Which of the following vitamin is water soluble?
- a) E b) K c) A d) B
15. The medicinal value of a drug is measured in terms of it
- a) Deoxy ribose b) Gold number
 c) Therapeutic index d) Equilibrium constant

PART – II

6 × 2 = 12

- Note: i) Answer any SIX from the following. Each question carries 2 marks.
- ii) Question no. 24 is compulsory.

16. Give the basic requirements for vapour phase refining.
17. How will you prepare chlorine in the laboratory?
18. Write any two characteristics of Transition elements.
19. If the no. of closely packed sphere is 6, calculate the no. of octahedral and Tetrahedral voids present.
20. Define intercalation.
21. Write the dispersed phase and dispersion medium of butter.
22. How is Phenolphthalein prepared?
23. What is glycosidic linkage?
24. Aniline does not undergo Friedel-Crafts reaction. Give reason.

PART – III $6 \times 3 = 18$

Note: i) Answer any SIX from the following. Each question carries 3 marks.

ii) Question no. 33 is compulsory.

25. Describe a method for refining Nickel.

26. Write about Holme's signal.

27. In a tetrahedral crystal field, draw the figure to show the splitting of d-orbitals.

28. Write Arrhenius equation and explain the terms involved in it.

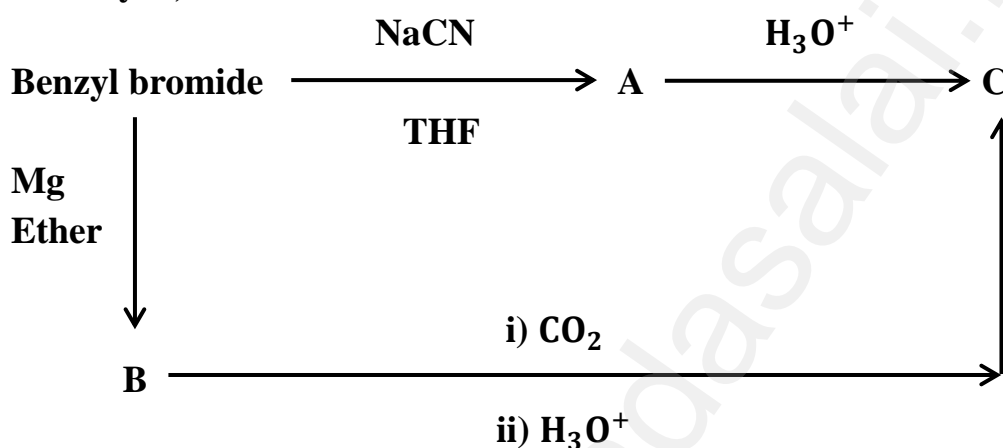
29. Explain the buffer action in a basic buffer containing equimolar ammonium hydroxide and ammonium chloride.

30. Write short notes on standard Hydrogen Electrode [SHE].

31. Write carbylamines reaction

32. How is Nylon-6, 6 prepared? Give its use.

33. Identify A, B and C.

PART – IV $5 \times 5 = 25$

Note: i) Answer all the questions.

ii) Each question carries 5 marks.

34.a) i) Explain how gold ore is leached using cyanide process.

ii) Illustrate the bleaching action of SO_2

(Or)

b) How are silicates classified? Give example for each type.

35.a) i) Explain why Cr^{2+} is strongly reducing while Mn^{3+} is strongly oxidising.

ii) A face centered cubic solid of an element (atomic mass 60) has a cube edge of 4A. Calculate its density.

(Or)

b) Write the postulates of Werner's theory.

36.a) i) Explain Pseudo first order reaction with example.

ii) Classify the following into Lewis acids and Lewis bases.

a) BF_3

b) CO_2

c) MgO

d) CH_3

(Or)

- b) i) What are Electro chemical series? How is it useful to predict corrosion?
ii) Explain auto oxidation of Ethers.

37. a) i) How will you convert benzaldehyde into

- i) Benzoin ii) Cinnamic acid

ii) Give the test for carboxylic acid.

(Or)

b) Elucidate the structure of Fructose.

38. a) A compound 'A' of molecular formula C_2H_3N on reduction with $Na/Hg/C_2H_5OH$ gives 'B' of molecular formula C_2H_7N which undergoes carbylamines test.

Compound 'B' on reaction with nitrous acid gives compound 'C' of molecular formula C_2H_6O by liberating nitrogen. Identify A, B, C with the reactions involved.

(Or)

b) i) State any three advantages of food additives.

ii) Give an example and use of antihistamine.

ALL THE BEST

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