

HSL

XII - Std

Time : 3.00 Hrs

HALF YEARLY EXAMINATION - 2022

CHEMISTRY

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Marks : 70

PART- I

15 x = 15

Answer all the question:

Choose the most appropriate Answer.

- Considering Ellingham diagram which of the following metal can be used to reduce alumina?
a) Fe b) Cu c) Mg d) Zn
- The basic structural unit of silicates is
a) $(\text{SiO}_3)^{2-}$ b) $(\text{SiO}_4)^{4-}$ c) $(\text{SiO})^-$ d) $(\text{SiO}_2)^{4-}$
- P_2O_5 reacts with cold water to give
a) H_3PO_3 b) $\text{H}_4\text{P}_2\text{O}_7$ c) HPO_3 d) H_3PO_4
- The magnetic moment of Mn^{2+} ion is
a) 5.92BM b) 2.80BM c) 8.95BM d) 3.90BM
- Fac-Mer Isomerism is shown by
a) $[\text{Co}(\text{en})_3]^{3+}$ b) $[\text{Co}(\text{NH}_3)_4(\text{Cl})_2]^+$ c) $[\text{Co}(\text{NH}_3)_3(\text{Cl})_3]$ d) $[\text{Co}(\text{NH}_3)_5\text{Cl}]\text{SO}_4$
- The vacant space in BCC lattice unit cell is
a) 48% b) 23% c) 32% d) 26%
- The rate constant of a reaction is $5.8 \times 10^{-2} \text{ s}^{-1}$.
a) First order b) Zero order c) Second order d) Third order
- The pH of 10^{-5} KOH solution will be
a) 9 b) 5 c) 19 d) none of these
- Which of the following electrolyte solution has the least specific conductance
a) 2N b) 0.002N c) 0.02N d) 0.2N
- Fog is a colloidal solution of
a) Solid in gas b) gas in gas c) liquid in gas d) gas in liquid
- Carbolic acid is
a) Phenol b) Picric acid c) Benzoic acid d) Phenyl acetic acid
- Which one of the following reduces the Tollen's reagent
a) Formic acid b) Acetic acid c) Benzophenone d) none of these
- The product formed by the reaction in aldehyde with primary amine
a) Carboxylic acid b) Aromatic acid c) Schiff base d) Ketone
- Which of the following vitamin is water soluble.
a) Vitamine-E b) Vitamine-K c) Vitamine-B d) Vitamine-A
- Nylon is an example of
a) polyamide b) polythene c) polyster d) poly saccaride

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PART - 2

Note: (i) Answer any six question. (ii) Answer question No.24 is compulsory :-

6 x 2 = 12

16. Give the basic requirements for vapour phase refining?
17. What is inert pair effect?
18. What is crystal field stabilisation energy?
19. What are point defects?
20. What is common ion effect?
21. What is the difference between a sol and gel.
22. Write Kolbe's reaction
23. What are antibiotics?
24. Distinguish Nitro and Acifforms.

PART - 3

Note: (i) Answer any six only :- (ii) Answer the question No.33 is compulsory :-

6 x 3 = 18

25. Write a note on Fisher - Tropsh synthesis.
26. What are transition metals? Give example
27. Differentiate crystalline solids and amorphous solids.
28. What are buffer solutions. Give example.
29. Differentiate ores and minerals.
30. Write Arrhenius Equation and explain.
31. What is Urotrophine? How it is prepared. Write the structure.
32. What are reducing and non-reducing sugar.

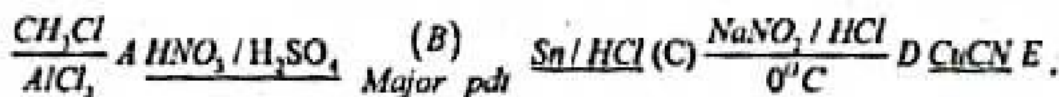
33. $C_6H_5OH \xrightarrow{Zn\ dust} A \xrightarrow[\text{anhydrous } AlCl_3]{CH_3Cl} B \xrightarrow{Na} C$. A, B, C. Identify and name it.

PART - 4

Answer all the question.

5 x 5 = 25

34. (a) Explain Zone refining process. (OR)
- (b) What is lanthanide contraction. What are the effects of lanthanide contraction.
35. (a) Write the postulate of Werner's co ordination Theory? (OR)
- (b) (i) Write coupling reaction. (ii) Write any one test to distinguish 1°, 2° and 3° alcohols.
36. (a) Explain stoichiometric defects in ionic solids. (OR)
- (b) (i) State Kohlrausch law?
- (ii) Derive an expression for Nernst equation.
37. (a) Explain intermediate compound formation theory of catalysis. (OR)
- (b) Write the difference between DNA and RNA.
38. (a) Explain the reaction Mechanism of Cannizzaro reaction. (OR)
- (b) Identify A to E in the following sequence of reaction.



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