

FIRST REVISION TEST - 2024

STANDARD - XII

Reg. No.

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Marks :

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Time : 3.00 Hrs.

CHEMISTRY

SECTION - A

15 X 1 =

I. Choose the correct answer:

1. Wolframite ore is separated from tin stone by the process of
a) calcination b) roasting c) smelting d) electromagnetic separation
2. Oxidation state of carbon in its hydrides
a) -4 b) +4 c) +3 d) +2
3. P_4O_6 reacts with cold water to give
a) $H_4P_2O_7$ b) H_3PO_3 c) HPO_3 d) H_3PO_4
4. XeF_6 on complete hydrolysis produces
a) XeO_2F_2 b) XeO_3 c) XeO_2 d) $XeOF_4$
5. The actinoid elements which show the highest oxidation state of +7 are
a) U, Th, Md b) Es, No, Lr c) U, Fm, Th d) Np, Pu, Am
6. The transition element which has only +3 oxidation state is
a) Mn b) Ni c) Cr d) Sc
7. A solid compound XY has NaCl structure, if the radius of the cation 100pm, the radius of anion will be
a) 100×0.414 b) $\left(\frac{0.414}{100}\right)$ c) $\left(\frac{0.732}{100}\right)$ d) $\left(\frac{100}{0.414}\right)$
8. The fraction of total volume occupied by the atoms in a simple cubic is
a) $\left(\frac{\pi}{6}\right)$ b) $\left(\frac{\pi}{4}\right)$ c) $\frac{\pi}{3\sqrt{2}}$ d) $\left(\frac{\pi}{4\sqrt{2}}\right)$
9. The rate constant of a reaction is $5.8 \times 10^{-2} S^{-1}$. The order of the reaction is
a) Zero order b) Second order c) Third order d) First order
10. If 75% of a first order reaction was completed in 60 minutes, 50% of the same reaction under same conditions would be completed in
a) 75 minutes b) 30 minutes c) 20 minutes d) 35 minutes
11. pH of a saturated solution of $Ca(OH)_2$ is 9. The solubility product of $Ca(OH)_2$
a) 0.125×10^{-15} b) 0.5×10^{-10} c) 0.5×10^{-15} d) 0.25×10^{-10}
12. Which of the following compounds on reaction with CH_3MgBr will give tertiary alcohol?
a) propanoic acid b) benzaldehyde c) methyl propanoate d) acetaldehyde
13. Which of the following compound can be used as antifreeze in automobile radiators?
a) ethan-1, 2-diol b) Neopentyl alcohol c) methanol d) ethanol
14. In which of the following reactions new carbon-carbon bond is not formed?
a) Friedel craft reaction b) Wolf kishner reduction
c) Aldol condensation d) Kolbe's reaction
15. The formation of cyanohydrin from acetone is an example of
a) nucleophilic substitution b) nucleophilic addition
c) electrophilic substitution d) electrophilic addition

SECTION - II

II. Answer any six questions. Question No. 24 is compulsory:

6 X 2 =

16. Define the term gangue

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22. Write Nef carbonyl synthesis.
23. Define enzymes.
24. A solution of silver nitrate is electrolysed for 20mts with a current of 2 amperes. Calculate the mass of silver deposited at the cathode.

PART - III

Answer any six questions. Question No. 33 is compulsory:

6 X 3 = 18

25. State Faraday's laws of electrolysis.
26. Give the applications of coordination compounds.
27. Discuss the factors affecting adsorption.
28. Write notes on electroosmosis.
29. How will you distinguish between primary, secondary and tertiary amines.
30. Differentiate DNA and RNA.
31. Write a short note on peptide bond.
32. Write a note on vulcanization of rubber.
33. How will you convert nitrobenzene into
i) m - nitro aniline ii) azoxybenzene iii) TNB

PART - IV

Answer all questions:

5 X 5 = 25

34. a) Explain the postulates of Werner's theory. 3
b) Write the limitations of VB theory. 2
(OR)
a) In the complex $[Pt(NO_2)(H_2O)(NH_3)_2]Br$ identify the following 6
i) Central metal atom ii) Ligands and their types iii) Coordination entity
iv) Oxidation number v) Coordination number and IUPAC name
35. a) Derive Nernst equation. 3
b) Why does conductivity of a solution decreases on dilution of the solution. 2
(OR)
a) Explain the function of H_2-O_2 fuel cell. 3
b) Ionic conductance of infinite dilution of Al^{3+} and SO_4^{2-} are 189 and 160 mho cm^2 $equiv^{-1}$. Calculate the equivalent and molar conductance of the electrolyte $Al_2(SO_4)_3$ at infinite dilution. 2
36. a) Write the characteristics of catalysts. 2
b) What are heterogeneous catalysis? 3
(OR) 2
a) Explain electro dispersion method
b) What is ultrafiltration? 3
37. a) Write short notes on the following. 2
i) Sandmeyer reaction
ii) Reaction of N-methyl aniline with nitrous acid. 1
iii) Coupling reaction. 2
(OR) 2
b) Explain the structure of fructose
38. a) Write a note on formation of α - helix. 5
b) What are food preservatives? 3
(OR) 3
a) Differentiate thermoplastic and thermosetting plastics. 2
b) Why do soaps not work in hard water? 3