

JEE MAIN 27 JANUARY 2024 SHIFT 2 QUESTION PAPER

CHEMISTRY

- Which of the following quantity changes with the temperature?
 - Mole Fraction
 - Mass Percentage
 - Molarity
 - Molality
- Which of the following can not act as an oxidising agent?
 - MnO_4^-
 - SO_4^{2-}
 - N^{3-}
 - BrO_3^-
- The phenolic group can be identified by a positive result by which of the following tests?
 - Lucas test
 - Carbylamine test
 - Phthalein test
 - Tollen's test
- The reduction potential at $\text{pH} = 3$ for a hydrogen electrode of a standard half cell is?
- Identify the following species in which d^2sp^3 hybridization is shown by central atom.
 - BrF_5
 - SF_6
 - $[\text{Co}(\text{NH}_3)_6]^{3+}$
 - $[\text{PtCl}_4]^{2-}$
- Which structure of protein is intact after coagulation of egg white on boiling?
- What is the molecular formula of the second homologue in the homologous series of monocarboxylic acid?
- In which of the options do all the elements have a d^{10} configuration in their ground state?
 - Cu, Zn, Cd, Ag
 - Cd, Au, Hg, Ni
 - Sc, Ti, Fe, Zn
 - Fe, Cr, Co, Ni
- For a first-order reaction, $t_{99.9\%} = xt_{50\%}$ Find out the value of x .
- If the longest wavelength for the Paschen Series in H-atom is α , Find $\alpha/7R$.

11. Which of the following will not give S_N1 ?
 - i. $\text{CH}_2=\text{CH}-\text{CH}_2-\text{Cl}$
 - ii. $\text{Ph}-\text{CH}_2-\text{Cl}$
 - iii. $\text{CH}_3-\text{CH}=\text{CH}-\text{Cl}$
 - iv. $(\text{H}_3\text{C})\text{C}-\text{Cl}$
12. Compare the stability of resonating structures. (A diagrammatic representation of three compounds was given.)
13. How many compound(s) given below have chiral carbon? (A diagrammatic representation of four compounds was given.)
14. Find the magnetic moment of complex $[\text{Pd}(\text{NH}_3)_2\text{Cl}_2]$.
15. When 9.3 g of aniline is reacted with acetic anhydride, mass of acetanilide obtained is m grams. Find out the value of 2m.
16. If X is the major product obtained when $\text{Ph}-\text{CH}=\text{CH}_2$ reacts in the presence of (1) $\text{B}_2\text{H}_6/\text{THF}/\text{H}_2\text{O}_2/\text{O}^-$, (2) HBr , (3) Mg , Dry Ether, and (4) HCHO , then find F.
17. What is the technique used for the purification of steam volatile water-immiscible substance?
18. Which of the following statements is correct:
 - i. Ce^{+4} is an oxidising agent
 - ii. Ce^{+4} is a reducing agent
 - iii. Ce^{+3} has a noble gas configuration
 - iv. Ce has a stable configuration