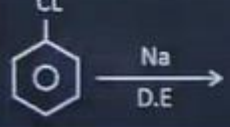
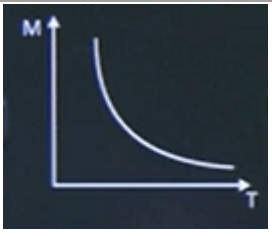
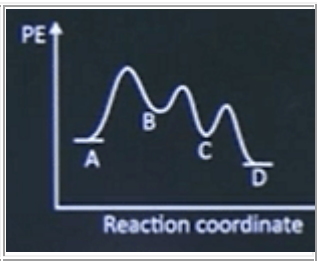
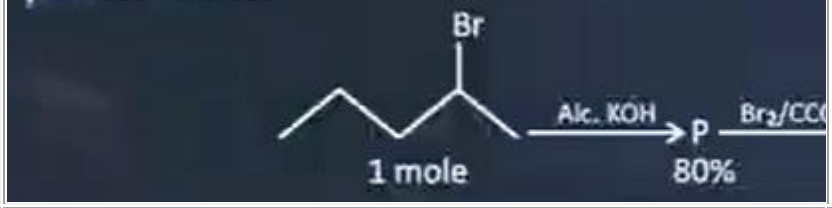
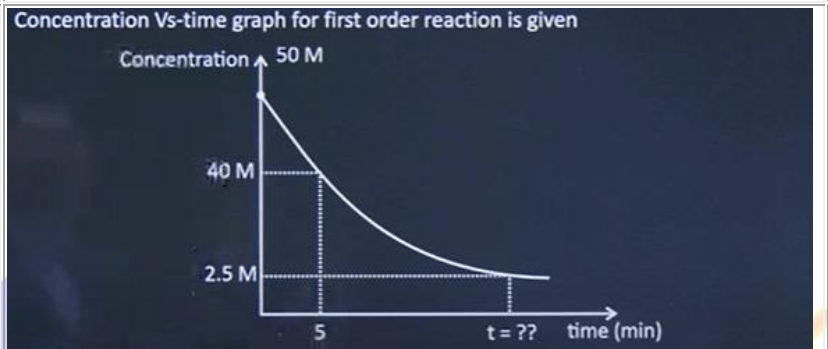
JEE MAIN 2 APRIL 2025 SHIFT 2

CHEMISTRY QUESTION PAPER WITH ANSWER KEY

Q. No.	Question	Answers
1	Correct order of electronegativity in below elements (A) $1s^2 2s^2 2p^3$ (B) $1s^2 2s^2 2p^4$ (C) $1s^2 2s^2 2p^5$ (D) $1s^2 2s^2 2p^6$	2. c > b > a > d
2	In 3, 3-dimethylhex-1-en-4-yne, the number of sp, sp^2 and sp^3 carbon atoms, respectively are	1. 2, 2, 4
3	Nature of compounds TeO_2 and TeH_2 is _____ and _____ respectively.	1. Oxidising and Reducing
4	**Statement-I**: Melting point of neopentane is greater than that of n-pentane. **Statement-II**: Neopentane give only one mono-substituted product.	Both S-I and S-II are correct
5	Sodium nitroprusside test is used for detection of which of the following species in organic compounds	2. S^{2-}
6	0.5 g organic compound is heated with CuO in a CO2 atmosphere at 300 K. The volume of N2 gas collected over H2O is 60 ml, if aqueous tension is 15 mmHg at 300K and pressure recorded is 715 mmHg, then calculate percentage of nitrogen in organic compound	13%
7	Which of the following is the correct order of enthalpy of atomisation of 3d-series?	1. Ni > Cu > Mn > Zn
8	Match the reactions given in List-I with the name of reaction given in List-II and select the correct opti A. $RX + Na \xrightarrow[\text{ether}]{\text{Dry}}$ — I. Fittig reaction B. $RCOOH \xrightarrow[\Delta]{NaOH + CaO}$ — II. Lucas method C. $ROH \xrightarrow[+H_4]{\text{anhy. } ZnCl_2}$ — III. Wurtz reaction D.  — IV. Soda lime Decarboxylation reaction	2. A-III, B-IV, C-II, D-I

9	In adiabatic process, the magnitude of work done ir step & ∞ step follows order :-	$\|W_{rev}\|_{expansion} > \|W_{ir}$
10	The four different amino acids are given A, B, C, and D. Calculate the number of tetrapeptides formed including all the four amino acids:	3. 24
11	Which of the following has at least one lone pair at the central atoms and different bond lengths?	3. SF_4
12	Which of the following reactions give carboxylic acid?	$RCN \xrightarrow{H^+/H_2O}$
13	Match List-I and List-II and select the correct option: **List - I (Pair of Molecules)** / **List - II (Purification Method)** A. Glycerol and spent-lye / I Steam distillation B. Water and Aniline / II Fractional distillation C. Petrol and Diesel / III Distillation under reduced pressure D. Aniline and $CHCl_3$ / IV Distillation	B. A-III, B-II, C-I, D-IV
14	For the reversible reaction A(g) ⇌ B(g) + C(g). The deg pressure P_T, then	2. If PT increases, then α decreases
15	The number of unpaired electrons and hybridisation of $[Mn(CN)_6]^{3-}$, respectively are :-	3. 2 and d^2sp^3
16	Consider the following statements (A) Value of l gives shape of orbital (B) ψ represent wave function of an electron (C) Electron density of p_x orbital in xy plane is zero (D) $2p_x$ orbital is  The correct statement(s) are	3. A, B, and D only
17	Which of the following complexes have highest CFSE value neglecting pairing energy (Magnitude)	4. $[Co(en)_3]^{3+}$
18	1 M NaCl solution is prepared at 0°C in H_2O. Now it is heated, then find correct graph between molarity and temperature	1. 

19	Consider the following reaction: $A \xrightarrow[\text{slow}]{\Delta H > 0} B \xrightarrow[\text{fast}]{\Delta H < 0} C \xrightarrow[\text{fast}]{\Delta H < 0} D$ Then correct graph will be	
20	Consider the following reaction sequence with p product formed. 	184 g
21	If the percentage w/v fo NaOH is 0.2 and resistivity is 870 millohm metre. Then, calculate A m (in $Sm^2\ mol^{-1}$)	230
22	Concentration Vs-time graph for first order reaction is given  Find out time required for concentration to become 2.5 M (in min) (Nearest integer)	65