



CHEMISTRY

BOOKS - KALYANI CHEMISTRY (ENGLISH)

SELF ASSESSMENT PAPER -9

Questions

1. A first order reaction takes 40 min for 30% decomposition. Calculate $t_{1/2}$



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2. The conversion of molecules X to y follows second order kinetics. If concentration of X is increased to three times how will it affect the rate of formation of Y?



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3. Benzene and toluene form ideal solution over the entire range of composition. The

vapour pressure of pure benzene and naphthalene at 300 K are 50.71 mm Hg and 32.06 mm Hg respectively. Calculate the mole fraction of benzene in vapour phase if 80 g of benzene is mixed with 100 g of naphthalene.



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4. Determine the osmotic pressure of a solution prepared by dissolving 25 mg of K_2SO_4 in 2 litre of water at 25° C, assuming that it is completely dissociated.



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5. How much electricity in terms of Faraday is required to produce

20.0 g of Ca from molten $CaCl_2$



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6. How much electricity in terms of Faraday is required to produce

40.0 g of Al from molten Al_2O_3



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7. How much charge is required for the following reduction :

1 mol of Al^{3+} to Al.

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8. How much charge is required for the following reduction :

1 mol of Cu^{2+} to Cu.

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9. How much charge is required for the following reduction :

1 mol of MnO_4^- to Mn^{2+} ?



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