1

Questions should be —
WRITTEN IN LEGIBLE HANDWRITING IN BLACK INK.
SIGNS, SKETCHES OR FIGURES IF ANY BE DRAWN IN NEAT BLACK INK,
so as to avoid mistakes in the printed question papers.

Duration ..... 03 ..... Hours. Total Marks assigned to the paper ..... 80 .....

Q. No.	N.B. : ANSWER KEY (Q.P. Code 38915)	Marks
Q.1.	(a) Technique – 3 M Explanation with example – 2 M	
	(b) Explaination – 2 M Mechanism – 1 M Two examples – 2 M	
	(c) Principle of conc. cell – 1M Explanation with eg. of AgCl. – 3M Expression – ½ M.	
	(d) Homogeneous catalysis – 2M with ② examples Heterogeneous catalysis – 2M with ② examples Catalytic poisons. – 1M	
	(e) Mechanism – 2 M Applications – 3 M.	
	(f) $D = 1247$, $V_o = 10ml$, $V_w = 10\ ml$ Let 'E' be the % extraction. then $D = 1247 = \frac{(V_w/V_o)\,E}{(100-E)}$ $\therefore 1247 = \frac{(10/10)\,E}{100-E}$ $\therefore E = 1247\,(100-E)$ $\therefore 1247E + E = 124700$ $\therefore E = \frac{124700}{1248} = \boxed{99.92\%}$	

Q2

Q. No.		Marks
Q.2-	(a) Note : 3 M Relation with zeta potential - 2M.	
	(b) Conc. of HCl soln = $C = 0.2N = 0.2\ g/dm^{+3}$ Movement of boundary = $l = 8.7\ cm$ Cross section of tube = $A = 0.62\ cm^2$ Mass of silver deposited = 0.14 g.	
	Soln: Q = quantity of electricity that flows in the circuit. 108 g silver = 1 Faraday (F) $\therefore 0.14$ g silver = $\frac{0.14}{108}$ F	
	Transport Number of H^+ ions = $\frac{lAc}{1000\,Q}$ $= \frac{8.7 \times 0.6 \times 0.2 \times 108}{1000 \times 0.14}$ $= \boxed{0.8322}$	
	Transport number of $Cl^{\ominus}$ ions = $1 - 0.8322$ $\boxed{= 0.1678}$	
	(c) Principle - 1M , Technique - 2M Applications - 2M	
	(d) Ion exchange method in brief - 1M Process - 4 M.	

Q 3

Q. No.		Marks
Q.3.	(a) Explanation - 3M Illustrations - 2M	
	(b) (i) ~~It~~ Reaction - 1½M, explanation - 1½M (ii) Reaction - 1½M, explanation - 1M.	
	(c) Requirement reason - 1M. Two applications - 4M. (2M each)	
	(d) Three methods names - 2M. ~~Des~~ Description - 3M.	
Q.4.	(a) Name - Reformatsky reaction - 1M Mechanism - 3M. Correct product - 1M.	
	(b) Spectrophotometry - 1M Principle of UV-visible - 1M Working - 2M. example - 1M.	
	(c) Note - Description - 2M Diagram - 1M. Applications - 2M.	
	(d) Diagram - (electronic) - 1M resonating structures - 1M reactions - 1M Explanations - Huckel rule, etc. - 2M	

04

Q. No.		Marks
Q.5	(a) Activation energy concept - 2 M Adsorption theory - 2M Example & diagram - 1M.	
	(b) Structure of pyridine / pyrrole. - 2 M Reason - 3 M.	
	(c) Defn - 1 M each Explaination - 2 M.	
	(d) No. of signals - 1 M each. explanation - 3 M.	
Q.6.	(a) Diagram - 2 M. Explanation - 2 M Applications - 1 M	
	(b) Principle - 1 M example - 1 M. Mechanism - 2 M. Application - 1M.	
	(c) Principle - 1M. Instrumentation & working - 3M. Applications - 1 M.	
	(d) Diagram - 1 M. Explanation - 4 M.	