Marking Scheme <u>Chemistry</u> Delhi- SET (56/1/3)

1	In which the alignment of domains (moments) is in a compensatory way to give zero net moment.	1
2	$\Lambda_{m} = \underbrace{\kappa}_{c} \text{where } \Lambda_{m} \text{ is molar conductivity , } \kappa \text{is conductivity } \\ c c \text{is concentration in mol } L^{-1}$	1
3	Chemisorption	1
4	Q.5 Set 1	1
5	Q.4 Set 1	1
6	Q.8 Set 1	1
7	Q.6 Set 1	1
8	Q.7 Set 1	1
9	Q.11 Set 2	2
10		
	$R = \rho(1/A)$	1
	Cell constant, $I/A = R/\rho = R\kappa = \text{Resistance x Conductivity}$	1
	$=(1300 \text{ s}^2) \times (0.140 \times 10^{-1} \text{ s}^{-1} \text{ cm}^{-1})$ = 0.219 cm ⁻¹	1
11	Q.9 Set 2	2
12	Q.16 Set 1	2
13	Q.17 Set 1	2
14	Q.9 Set 1	2
15	Q.10 Set 1	2
16	Q.18 Set 1	2
17	Q.14 Set 1	2
18	Q.15 Set 1	2

19	 (i) Due to larger size of alkali metal ions. (ii) Due to the presence of holes or vacancies. (iii) Due to the presence of extra electrons or holes in impurity doped silicon. 	1x3=3
	 (i) <u>Ferromagnetism</u>: The substance which are attracted very strongly by a magnetic field and show magnetism even when the magnetic field is removed. (ii) <u>Paramagnetism</u>: The substances which are weakly attracted by magnetic field and loose their magnetism in the absence of magnitic field. 	
	 ex.O₂,Cu²⁺,Fe³⁺,Cr³⁺ (any one example) (iii) <u>Ferrimagnetism</u>: When the magnetic moments of the domains in the substance are aligned in parallel and antiparallel directions in unequal numbers then substance shows ferrimagnetism. ex. Fe₃O₄ (magnetite), MgFe₂O₄,ZnFe₂O₄ 	6x ¹ /2=3
20	Q.20 Set 1	3
21	(i) Zone refining: This method is based on the principle that the impurities are more soluble in the melt than in the solid state of metal.	
	 (ii) <u>Vapour phase refining:</u> In this method, the metal is converted into its volatile compound and collected elsewhere. It is then decomposed to give pure metal 	
	 (iii) <u>Electrolytic refining:</u> In this method, the impure metal is made to act as anode. A strip of the same metal in pure form is used as cathode. They are put in a suitable electrolytic bath containing soluble salt of the same metal. The more basic metal remains in the solution and the less basic ones go to the 	1-2-2
	anode mud	1x5=5
22	(i) Ferric hydroxide sol is positively charged. By adding potassium chloride, the excess chloride ions neutralize its positive charge and cause it to coagulate.	
	(ii) The dispersed phase and dispersion medium migrate towards oppositely charged electrodes (electrophoresis).	
	(iii) The beam of light is scattered by colloidal particles(Tyndall effect).	1x3=3
23	Q.27 Set 1	3
24	Q.26 Set 1	3
25	Q.24 Set 1	3
26	Q.25 Set 1	3

27	Q.23 Set 1	3
28	Q.29 Set 1	5
29	Q.28 Set 2	5
30	Q.30 Set 1	5