## 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	$\Lambda_{m} = \underbrace{\kappa}_{c}  \text{where } \Lambda_{m} \text{ is molar conductivity , } \kappa  \text{is conductivity } \\ c  \text{is concentration in mol } L^{-1}$	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	$R = \rho(1 / A)$ Cell constant, 1/A = R/ $\rho$ = R $\kappa$ = Resistance x Conductivity =(1500 $\Omega$ ) x (0.146 x 10 <sup>-3</sup> S cm <sup>-1</sup> ) = 0.219 cm <sup>-1</sup>	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

10		1
19	<ul> <li>(i) Due to larger size of alkali metal ions.</li> <li>(ii) Due to the presence of holes or vacancies.</li> <li>(iii) Due to the presence of extra electrons or holes in impurity doped silicon.</li> </ul>	1x3=3
	<ul> <li>(i) Ferromagnetism: The substance which are attracted very strongly by a magnetic field and show magnetism even when the magnetic field is removed.</li> <li>ex.iron,cobalt,nickel,CrO<sub>2</sub> (any one example)</li> <li>(ii) Paramagnetism: The substances which are weakly attracted by magnetic field and lopse their magnetism in the absence of magnitic field.</li> </ul>	
	<ul> <li>ex.O<sub>2</sub>,Cu<sup>2+</sup>,Fe<sup>3+</sup>,Cr<sup>3+</sup> (any one example)</li> <li>(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.</li> <li>ex. Fe<sub>3</sub>O<sub>4</sub> (magnetite), MgFe<sub>2</sub>O<sub>4</sub>,ZnFe<sub>2</sub>O<sub>4</sub></li> </ul>	$6x^{1/2}=3$
	(any one example)	
20	Q.20 Set 1	3
21	(i) <u>Zone refining:</u> This method is based on the principle that the impurities are more soluble in the melt than in the solid state of metal.	
	<ul> <li>(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.</li> </ul>	
	<ul> <li>(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 anode mud</li> </ul>	1x3=3
22	<ul> <li>(i) Ferric hydroxide sol is positively charged. By adding potassium chloride, the excess chloride ions neutralize its positive charge and cause it to coagulate.</li> <li>(ii) The dispersed phase and dispersion medium migrate towards oppositely charged electrodes (electrophoresis).</li> </ul>	
	<ul><li>(iii) The beam of light is scattered by colloidal particles(Tyndall effect).</li></ul>	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