MT EDUCARE LTD.

ICSE X SUBJECT : **CHEMISTRY**

METALLURGY

Assignment Sheet

STEP UP ANSWERSHEET

23. (C) Bronze **[2013]**

24. (i) Cryolite
Molten cryolite acts as solvent for alumina, lowers the fusion temperature from 2050°C to 950°C and enhances conductivity.

(ii) $Al^{3+} + 3e^- \longrightarrow Al.$

(iii) During electrolysis oxygen gas is formed at anode and as the temperature is quite high it burns the graphite anode to carbon dioxide, so it is necessary to replace anode periodically. **[2013]**

25. (i) Y
(ii) eight
(iii) Acidic, Basic
(iv) bad

26. (i) (A) Heamatite
(ii) (C) Calcination
(iii) (A) it is a strong reducing agent. **[2014]**

27. (i) Copper and zinc.
(ii) Aluminium and copper
(iii) Copper and Tin **[2014]**

28. (i) Malleability
(ii) Cryolite
(iii) Zinc blende **[2014]**

29. (C) Solder **[2015]**

30. (1) Cryolite acts as a solvent for the electrolytic mixture as it lowers the fusion temperature from 2050°C to 950°C and enhances conductivity.

(2) Sodium hydroxide is used to remove insoluble impurities from the ore. When bauxite ore is treated with sodium hydroxide, it dissolves and forms sodium aluminate leaving behind insoluble impurities called red mud (consists of ferric oxide, sand etc.)

(3) Graphite is used an an electrode in the extraction of aluminium because it has a very high melting point and is good conductor of electricity. **[2015]**

31. Reducing agents, donors **[2016]**

32. (D) copper and tin **[2016]**

33. Froth Flotation **[2016]**

34. $2Al(OH)_3 \xrightarrow{1100^0C} Al_2O_3 + 3H_2O$ **[2016]**

35. (1) Pulverisation
(2) Calcination **[2017]**

36. (A) (i) Galvanization
(ii) Solder
(iii) Zinc blende
(iv) Copper oxide **[2017]**

(B) (i) Electrolyte constitutes of :
Fused alumina – 1 part
Cryolite – 3 parts
Fluorspar – 1 part
Addition of mainly cryolite & fluorspar lowers the fusion point of the mixture, enhances the conductivity & mobility of the mixture and acts as a solvent.

(ii) The layer of powdered coke prevents the burning of the carbon electrodes in air at the point where they emerge from the bath. It also prevents or minimizes heat loss by radiation. **[2017]**

(C) (i) Cu
(ii) Pb
(iii) Mg **[2017]**

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