General Principles and Processes ofIsolation of Elements

1. The electrolytic reduction technique is used in the extraction of
(a) Highly electronegative elements.
(b) Highly electropostive elements.
(c) Metalloids.
(d) Transition metals.

▼ **Answer**

Answer: b

2. In the commercial electrochemical process for aluminium extraction, electrolyte used is
(a) $Al(OH)_3$ is NaOH solution.
(b) An aqueous solution of $Al_2(SO_4)_3$.
(c) A molten mixture of Al_2O_3 and Na_3AlF_6.
(d) A molten mixture of Al_2O_3 and $Al(OH)_3$.

▼ **Answer**

Answer: c

3. Which ore can be best concentrated by froth floatation process?
(a) Malachite
(b) Cassiterite
(c) Galena
(d) Magnetite

▼ **Answer**

Answer: c

4. Electrolytic reduction of Al_2O_3 to Al by Hall- Herault process is carried out
(a) in presence of NaCl.
(b) in presence of fluorite.
(c) in presence of cryolite which forms a melt with lower melting point.
(d) in presence of cryolite which forms a melt with high melting point.

▼ **Answer**

Answer: c

5. The chemical composition of 'slag' formed during the melting process in the extraction of copper is
(a) $Cu_2O + FeS$
(b) $FeSiO_3$
(c) $CuFeS_2$
(d) $Cu_2S + FeO$

▼ **Answer**

Answer: b

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6. Bessemer converter is used in the manufacture of
(a) Pig iron
(b) Steel
(c) Wrought iron
(d) Cast iron

▼ **Answer**

Answer: b

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7. The method of zone refining of metals is based on the principle of
(a) greater mobility of the pure metal than that of the impurity.
(b) higher melting point of the impurity than that of the pure metal.
(c) greater noble character of the solid metal than that of impurity.
(d) greater solubility of the impurity in the molten state than in the solid.

▼ **Answer**

Answer: d

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8. In the leaching of Ag_2S with NaCN, a stream of air is also passed. It is because
(a) The reaction between Ag_2S and NaCN is reversible.
(b) to oxidise Na_2S formed in the reaction to Na_2SO_4.
(c) to oxidise Ag_2S to Ag_2O.
(d) Both (a) and (b).
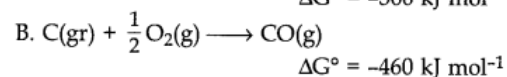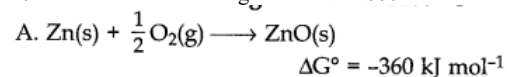
▼ **Answer**

Answer: d

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9. Purest form of iron is
(a) Cast iron
(b) Hard Steel
(c) Stainless steel
(d) Wrought iron

▼ **Answer**

Answer: d

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10. Consider the following reaction at 1000° C

A. $Zn(s) + \frac{1}{2} O_2(g) \longrightarrow ZnO(s)$
$$\Delta G° = -360 \text{ kJ mol}^{-1}$$
B. $C(gr) + \frac{1}{2} O_2(g) \longrightarrow CO(g)$
$$\Delta G° = -460 \text{ kJ mol}^{-1}$$

Choose the correct statement at 1000°C
(a) Zinc can be oxidised by carbon monoxide.
(b) Zinc oxide can be reduced by graphite.
(c) Both statements (a) and (b) are correct.
(d) Both statements (a) and (b) are false.

▼ **Answer**

Answer: b