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DPP - 05

Only One Correct

Q.1 AgCl on fusion with Na_2CO_3 forms

(A) Ag_2CO_3 (B) Ag_2O (C) Ag (D) Ag_2C_2

Q.2 A solution of Na_2SO_4 in water is electrolysed using inert electrodes. The products at cathode and anode are respectively

(A) O_2 ; H_2 (B) O_2 ; Na (C) H_2 ; O_2 (D) O_2 ; SO_2

Q.3 Give the correct order of initials **T** or **F** for following statements. Use **T** if statement is true and **F** if it is false.

(i) In Gold Schmidt thermite process aluminium acts as a reducing agent.

(ii) Mg is extracted by electrolysis of aq. solution of $MgCl_2$.

(iii) Extraction of Pb is possible by smelting.

(iv) Red Bauxite is purified by Serpeck's process.

(A) TTTF (B) TFFT (C) FTTT (D) TFTF

Q.4 Among the following groups of oxides, the group containing oxides that cannot be reduced by C to give the respective metal is

(A) CaO and K_2O (B) Fe_2O_3 and ZnO (C) Cu_2O and SnO_2 (D) PbO and Pb_3O_4

Q.5 Consider the following metallurgical processes:

(I) Heating impure metal with CO and distilling the resulting volatile carbonyl (b.p. 43°C) and finally decomposing at 150°—200°C to get the pure metal

(II) Heating the sulphide ore in air until a part is converted to oxide and then further heating in the absence of air to let the oxide react with unchanged metal sulphide.

(III) Electrolysis of the molten electrolyte containing approximately equal amounts of the metal chloride and NaCl to obtain the metal

The processes used for obtaining magnesium, nickel and copper are respectively:

(A) (I), (II) and (III) (B) (II), (III) and (I) (C) (III), (I) and (II) (D) (II), (I) and (III)

Q.6 Select the correct option for the given processes.

(i) Process of heating steel to redness and then cooling it very slowly.

(ii) Process of heating steel in presence of NH_3 and producing hard coating of Iron Nitride on the surface of steel.

(iii) Process of heating steel to redness and then cooling it suddenly by plunging it into water or oil.

(iv) Process of heating quenched steel to a temperature well below redness and then cooling it slowly.

(A) Tempering, Nitriding, Annealing & Quenching respectively

(B) Quenching, Nitriding, Annealing & Case Hardening respectively

(C) Tempering, Case harding, Quenching & Annealing respectively

(D) Annealing, Nitriding, Quenching & Tempering respectively

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Q.7 When the sample of Cu with Zn impurity is to be purified by electrolysis, the appropriate electrodes are:

	Cathode	Anode
(A)	Pure Zn	Pure Cu
(B)	Impure sample	Pure Cu
(C)	Impure Zn	Impure sample
(D)	Pure copper	Impure sample

More than one correct

Q.8 During the production of iron and steel.

(A) The oxide ore is primarily reduced to iron by solid coke according to the reaction.

$$2Fe_2O_3 + 3C \longrightarrow 4Fe + 3CO_2$$

(B) The oxide ore is reduced by the carbon monoxide according to the reaction

$$Fe_2O_3 + 3CO \longrightarrow 2Fe + 3CO_2$$

(C) Major silica impurities are removed as calcium silicate slag by addition of a fluxing agent lime stone.

(D) The converter slag containing phosphorus is used as a fertilizer.

Q.9 **Assertion** : Graphite is used as anode but not diamond.

Reason: Mobile electron are present in graphite layer which helps in the electrical conductivity

(A) if both (A) and (R) are true and (R) is the correct explanation of (A)

(B) if both (A) and (R) are true but (R) is not correct explanation of (A)

(C) if (A) is true but (R) is false

(D) if (A) is false and (R) is true

Match the Column

Q.10

	Column-I (Conversion processes)		Column-II (Involves which of the following operation/s)
(A)	Auriferrous rock → Au	(P)	Roasting (separately)
(B)	Haemetite containing siderite and magnetite → Fe	(Q)	Smelting
(C)	Bauxite → Al	(R)	Leaching
(D)	Galena → Pb (by self reduction)	(S)	Electrolytic reduction
		(T)	Froth floatation

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ANSWER KEY

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1.	(C)	**2.**	(C)	**3.**	(D)	**4.**	(A)	**5.**	(C)	**6.**	(D)	**7.**	(D)
8.	(B,C,D)	**9.**	(A)	**10.**	(A) – R ; (B) – P, Q ; (C) – R,S ; (D) – T								