

Q1 2021 (01 Sep Shift 2)

Calamine and Malachite, respectively, are the ores of :

- (1) Nickel and Aluminium
- (2) Zinc and Copper
- (3) Copper and Iron
- (4) Aluminium and Zinc

Q2 2021 (31 Aug Shift 2)

In the electrolytic refining of blister copper, the total number of main impurities, from the following, removed as anode mud is _____

Pb, Sb, Se, Te, Ru, Ag, Au and Pt

Q3 2021 (31 Aug Shift 1)

Given below are two statements : one is labelled as

Assertion (A) and the other is labelled as *Reason (R)*.

Assertion (A) : Aluminium is extracted from bauxite by the electrolysis of molten mixture of Al_2O_3 with cryolite.

Reason (R) : The oxidation state of Al in cryolite is +3.

In the light of the above statements, choose the *most appropriate* answer from the options given below :

- (1) (A) is true but (R) is false.
- (2) (A) is false but (R) is true.
- (3) Both (A) and (R) are correct and (R) is the correct explanation of (A).
- (4) Both (A) and (R) are correct but (R) is not the correct explanation of (A).

Q4 2021 (27 Aug Shift 2)

Match List – I with List – II :

List-I (Name of ore/mineral)	List-II (Chemical formula)
(a) Calamine	(i) ZnS
(b) Malachite	(ii) $FeCO_3$
(c) Siderite	(iii) $ZnCO_3$
(d) Sphalerite	(iv) $CuCO_3 \cdot Cu(OH)_2$

Choose the *most appropriate* answer from the options given below :

- (1) (a)-(iii), (b)-(iv), (c)-(ii), (d)-(i)
- (2) (a)-(iii), (b)-(iv), (c)-(i), (d)-(ii)
- (3) (a)-(iv), (b)-(iii), (c)-(i), (d)-(ii)
- (4) (a)-(iii), (b)-(ii), (c)-(iv), (d)-(i)

Q5 2021 (27 Aug Shift 1)

Which refining process is generally used in the purification of low melting metals ?

- (1) Chromatographic method
- (2) Liquation
- (3) Electrolysis
- (4) Zone refining

Q6 2021 (26 Aug Shift 2)

Given below are two statements :

Statement I : Sphalerite is a sulphide ore of zinc and copper glance is a sulphide ore of copper.

Statement II : It is possible to separate two sulphide ores by adjusting proportion of oil to water or by using 'depressants' in a froth flotation method.

Choose the *most appropriate* answer from the options given below :

(1) *Statement I* is true but *Statement II* is false.

(2) Both *Statement I* and *Statement II* are true.

(3) *Statement I* is false but *Statement II* is true.

(4) Both *Statement I* and *Statement II* are false.

Q7 2021 (26 Aug Shift 1)

Given below are two statements.

Statement I: The choice of reducing agents for metals extraction can be made by using Ellingham diagram, a plot of ΔG vs temperature.

Statement II: The value of ΔS increases from left to right in Ellingham diagram.

In the light of the above statements, choose the *most appropriate* answer from the options given below:

(1) Both *Statement I* and *Statement II* are true

(2) *Statement I* is false but *Statement II* is true

(3) Both *Statement I* and *Statement II* are false

(4) *Statement I* is true but *Statement II* is false

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Answer Key

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Q1 (2)

Q2 (6)

Q3 (4)

Q4 (1)

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Q5 (2)

Q6 (2)

Q7 (4)

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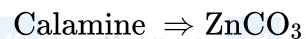
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#MathBoleTohMathonGo

Q1 (2)



Q2 (6)

Anode mud contains Sb, Se, Te, Ag, Au and Pt

Q3 (4)

(A) Aluminium is reactive metal so Aluminium is extracted by electrolysis of Alumina with molten mixture of Cryolite.

(B) Cryolite, Na_3AlF_6

Here Al is in +3 O.S.

So Answer is 4.

Q4 (1)

(Name of ore/mineral)

(a) Calamine ZnCO_3

(b) Malachite $\text{CuCO}_3 \cdot \text{Cu}(\text{OH})_2$

(c) Siderite FeCO_3

(d) Sphalerite ZnS

Q5 (2)

Liquation method is used to purify those impure metals which has lower melting point than the melting point of impurities associated.

\therefore This method is used for metal having low melting point.

Q6 (2)

Sphalerite— ZnS , copper glance— Cu_2S two sulphide ores can be separated by adjusting proportions of oil to water or by using 'Depressants'.

Q7 (4)

Given *Statement – I* is true as in a number of processes, one element is used to reduce the oxide of another metal. Any element will reduce the oxide of other metal which lie above it in the Ellingham diagram because the free energy change will become more negative.

Given *Statement – II* is false as the value of ΔS is decreases from left to right in Ellingham diagram.