

Questions

MathonGo

Q1 - 24 June - Shift 1

Which of the following statements are correct ?

- (A) Both LiCl and MgCl_2 are soluble in ethanol.
- (B) The oxides Li_2O and MgO combine with excess of oxygen to give superoxide.
- (C) LiF is less soluble in water than other alkali metal fluorides.
- (D) Li_2O is more soluble in water than other alkali metal oxides.

Choose the most appropriate answer from the options given below:

- (A) (A) and (C) only (B) (A), (C) and (D) only
- (C) (B) and (C) only (D) (A) and (C) only

Space for your notes:

Q2 - 24 June - Shift 2

Which one of the following compounds is used as a chemical in certain type of fire extinguishers?

- (A) Baking Soda (B) Soda ash
- (C) Washing Soda (D) Caustic Soda

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Q3 - 24 June - Shift 2

In the flame test of a mixture of salts, a green flame with blue centre was observed. Which one of the following cations may be present?

- (A) Cu^{2+} (B) Sr^{2+}
- (C) Ba^{2+} (D) Ca^{2+}

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Q4 - 25 June - Shift 1

Which one of the following alkaline earth metal ions has the highest ionic mobility in its aqueous solution?

- (A) Be^{2+} (B) Mg^{2+}
(C) Ca^{2+} (D) Sr^{2+}

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Q5 - 26 June - Shift 1

The correct order of melting point is :

- (A) $\text{Be} > \text{Mg} > \text{Ca} > \text{Sr}$ (B) $\text{Sr} > \text{Ca} > \text{Mg} > \text{Be}$
(C) $\text{Be} > \text{Ca} > \text{Mg} > \text{Sr}$ (D) $\text{Be} > \text{Ca} > \text{Sr} > \text{Mg}$

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Q6 - 26 June - Shift 2

s-block element which cannot be qualitatively confirmed by the flame test is

- (1) Li (2) Na (3) Rb (4) Be

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Q7 - 27 June - Shift 1

Addition of H_2SO_4 to BaO_2 produces:

- (A) BaO , SO_2 and H_2O (B) BaHSO_4 and O_2
(C) BaSO_4 , H_2 and O_2 (D) BaSO_4 and H_2O_2

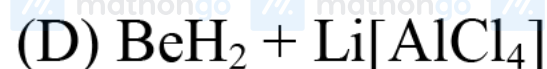
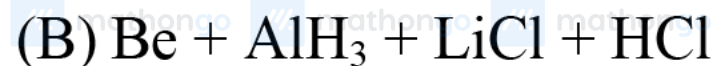
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Q8 - 27 June - Shift 1

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BeCl₂ reacts with LiAlH₄ to give

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Q9 - 27 June - Shift 2

BeO reacts with HF in presence of ammonia to give [A] which on thermal decomposition produces [B] and ammonium fluoride. Oxidation state of Be in [A] is _____

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Q10 - 29 June - Shift 1

Match the List-I with List- II.

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List-I (Metal)	List-II (Emitted light wavelength (nm))
(A) Li	(I) 670.8
(B) Na	(II) 589.2
(C) Rb	(III) 780.0
(D) Cs	(IV) 455.5

Choose the most appropriate answer from the options given below:

(A) (A)-(I), (B)-(II), (C)-(III), (D)-(IV)

(B) (A)-(III), (B)-(II), (C)-(I), (D)-(IV)

(C) (A)-(III), (B)-(I), (C)-(II), (D)-(IV)

(D) (A)-(IV), (B)-(II), (C)-(I), (D)-(III)

Q11 - 29 June - Shift 2

Amongst baking soda, caustic soda and washing soda carbonate anion is present in :

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(A) washing soda only.

(B) washing soda and caustic soda only.

(C) washing soda and baking soda only.

(D) baking soda, caustic soda and washing soda.

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Answer Key

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Q1 (A) **Q2 (A)** **Q3 (A)** **Q4 (D)**
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Q5 (D) **Q6 (D)** **Q7 (D)** **Q8 (C)**
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Q9 (2) **Q10 (A)** **Q11 (A)**
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Hints and Solutions

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Q1 (A)

(A) Both LiCl and MgCl₂ are soluble in ethanol

(B) Li and Mg do not form superoxide

(C) LiF has high lattice energy

(D) Li₂O is least soluble in water than other alkali

metal oxides

Q2 (A)

Sodium hydrogencarbonate (Baking soda),

NaHCO₃ is used in the fire extinguishers.

Q3 (A)

Ion Colour of the flame

(A) Cu⁺² green flame with blue centre

(B) Sr²⁺ Crimson Red

(C) Ba²⁺ Apple green

Q4 (D)

Highest ionic mobility corresponds to lowest extent of hydration and highest size of gaseous ion.

Hence Sr²⁺ has the highest ionic mobility in its aqueous solution

Q5 (D)

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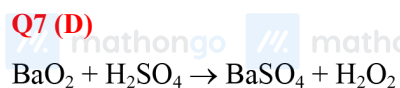
Be 1560 K

Mg 924 K

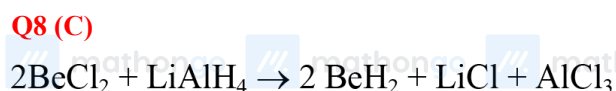
Ca 1124 K

Sr 1062 K

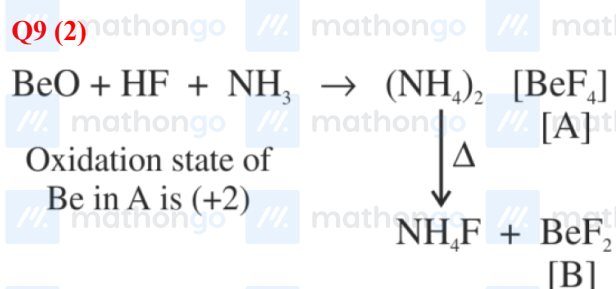
Q6 (D)
refer NCERT (Page No. 300)



This is a common method to prepare hydrogen peroxide



This is the method to prepare BeH_2



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Q10 (A)

Metal	Li	Na	K	Rb	Cs
Colour	Crimson red	Yellow	Violet	Red Violet	Blue
λ/nm	670.8	589.2	766.5	780.0	455.5

Q11 (A)

Baking soda $\rightarrow \text{NaHCO}_3$

Washing soda $\rightarrow \text{Na}_2\text{CO}_3 \cdot 10\text{H}_2\text{O}$

Caustic soda $\rightarrow \text{NaOH}$