

## Master Math for JEE Main & JEE Advanced

Crash Courses designed specifically for students who want to improve their percentile & score in upcoming JEE Main & JEE Advanced exam. **Tap on the banners to know more.**

For JEE Main 2020 April



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For JEE Advanced 2020



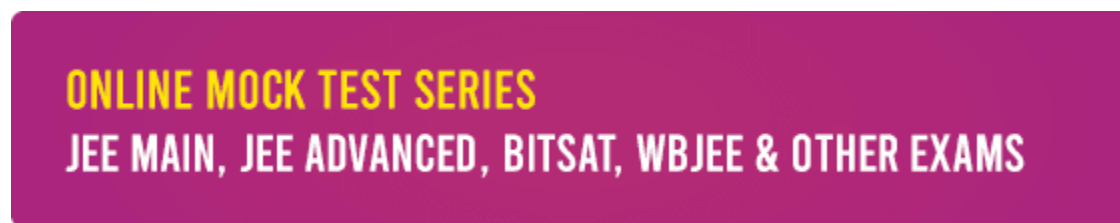
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## JEE Mains 2020 Jan Chapter wise Question Bank

## s-Block Elements

Q1

In zeolites & synthetic resin method which will be more efficient in removing permanent hardness of water :

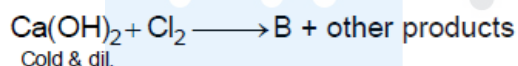
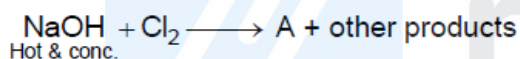
- (1) Synthetic resin method as it exchange only cation.
- (2) Zeolite resin method as it exchange only cation.
- (3) Synthetic resin method as it exchange only anion.
- (4) Synthetic resin is harmful for nature.

7<sup>th</sup> Jan Morning

Sol

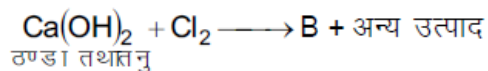
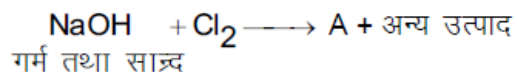
(1)

Q2



A & B are respectively

- |   |   |
|---|---|
| (1) NaClO <sub>3</sub> , Ca(OCl) <sub>2</sub> | (2) NaClO <sub>3</sub> , Ca(ClO <sub>3</sub> ) <sub>2</sub> |
| (3) NaCl, Ca(ClO <sub>3</sub> ) <sub>2</sub>  | (4) NaClO, Ca(ClO <sub>3</sub> ) <sub>2</sub>               |



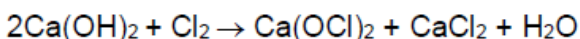
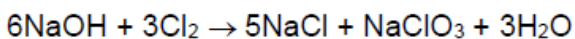
A तथा B क्रमशः है -

- |   |   |
|---|---|
| (1) NaClO <sub>3</sub> , Ca(OCl) <sub>2</sub> | (2) NaClO <sub>3</sub> , Ca(ClO <sub>3</sub> ) <sub>2</sub> |
| (3) NaCl, Ca(ClO <sub>3</sub> ) <sub>2</sub>  | (4) NaClO, Ca(ClO <sub>3</sub> ) <sub>2</sub>               |

7<sup>th</sup> Jan Evening

Sol

(1)



Gypsum on heating at 393K produces

(1) dead burnt plaster

(2) Anhydrous  $\text{CaSO}_4$

(3)  $\text{CaSO}_4 \cdot \frac{1}{2}\text{H}_2\text{O}$

(4)  $\text{CaSO}_4 \cdot 5\text{H}_2\text{O}$

8<sup>th</sup> Jan Morning

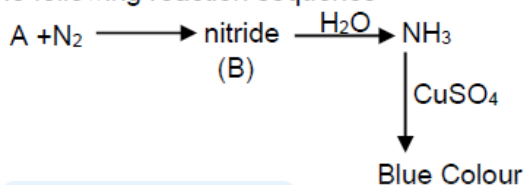
Sol

(3)

Theory based.

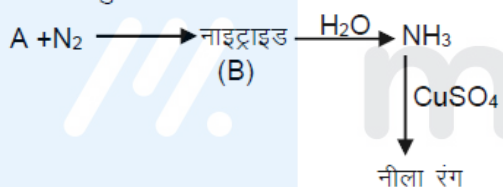
Q4

Given the following reaction sequence



A & B are respectively

निम्न अभिक्रिया अनुक्रम दिया गया है



A तथा B क्रमशः है

(1) Mg,  $\text{Mg}_3\text{N}_2$

(2) Na,  $\text{Na}_3\text{N}$

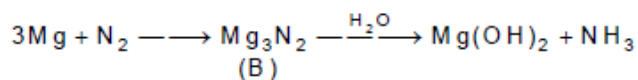
(3) Mg,  $\text{Mg}(\text{NO}_3)_2$

(4) Na,  $\text{NaNO}_3$

8<sup>th</sup> Jan Evening

Sol

(1)



Q5

Which of the following oxides are acidic, Basic Amphoteric Respectively.

निम्न में से कौनसे ऑक्साइड क्रमशः अम्लीय, क्षारीय, उभयधर्मी है—

(1)  $\text{MgO}$ ,  $\text{P}_4\text{O}_{10}$ ,  $\text{Al}_2\text{O}_3$  (2)  $\text{N}_2\text{O}_3$ ,  $\text{Li}_2\text{O}$ ,  $\text{Al}_2\text{O}_3$  (3)  $\text{SO}_3$ ,  $\text{Al}_2\text{O}_3$ ,  $\text{Na}_2\text{O}$  (4)  $\text{P}_4\text{O}_{10}$ ,  $\text{Al}_2\text{O}_3$ ,  $\text{MgO}$

9<sup>th</sup> Jan Morning

(2)

Non-metal oxides are acidic in nature  
alkali metal oxides are basic in nature  
 $\text{Al}_2\text{O}_3$  is amphoteric.

Q6

Determine degree of hardness in term of ppm of  $\text{CaCO}_3$  of  $10^{-3}$  molar  $\text{MgSO}_4$  (aq).

9<sup>th</sup> Jan Morning

Sol

100.00

$10^{-3}$  molar  $\text{MgSO}_4 \equiv 10^{-3}$  moles of  $\text{MgSO}_4$  present in 1 L solutions.

$10^{-3}$  मोलर  $\text{MgSO}_4 \equiv 1$  L विलयन में उपस्थित  $\text{MgSO}_4$  के  $10^{-3}$  मोल

$$n_{\text{CaCO}_3} \equiv n_{\text{MgSO}_4}$$

$$\text{ppm}_{(\text{in term of CaCO}_3)} = \frac{10^{-3} \times 100}{1000} \times 10^6$$

$$\text{ppm}_{(\text{in term of CaCO}_3)} = 100 \text{ ppm}$$

Q7

Select the correct statements among the followings

- (A) LiCl does not dissolve in pyridine
- (B) Li does not react ethyne to form ethynide.
- (C) Li and Mg react slowly with water.
- (D) Among alkali metals Li has highest hydration tendency.

9<sup>th</sup> Jan Evening

Sol

(1)

Theory based

Q8

**s-Block Elements****JEE Mains 2020 Jan Chapter wise Question Bank**

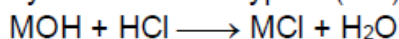
Given an element having following ionisation enthalpies  $IE_1 = 496 \frac{\text{kJ}}{\text{mol}}$  and  $IE_2 = 4562 \frac{\text{kJ}}{\text{mol}}$  one mole hydroxide of this element is treated separately with HCl and  $\text{H}_2\text{SO}_4$  respectively. Moles of HCl and  $\text{H}_2\text{SO}_4$  reacted respectively is

निम्न आयनन एन्थैल्पी रखने वाला एक तत्व दिया गया है  $IE_1 = 496 \frac{\text{kJ}}{\text{mol}}$  तथा  $IE_2 = 4562 \frac{\text{kJ}}{\text{mol}}$  इस तत्व के एक मोल हाइड्रॉक्साइड को पृथक रूप से क्रमशः HCl तथा  $\text{H}_2\text{SO}_4$  के साथ उपचारित किया जाता है। अभिकृत HCl तथा  $\text{H}_2\text{SO}_4$  के मोल क्रमशः हैं—

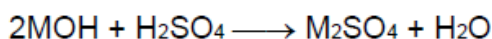
- (1) 1, 0.5                      (2) 0.5, 1                      (3) 2, 0.5                      (4) 0.5, 2

**9<sup>th</sup> Jan Evening****Sol**

(1)  
According to the given data of I.E, This element must belong to group 1 and thus is monovalent & form hydroxide of the type  $\text{M}(\text{OH})$ .



1 mole    1 mole



1 mole    1/2 mole



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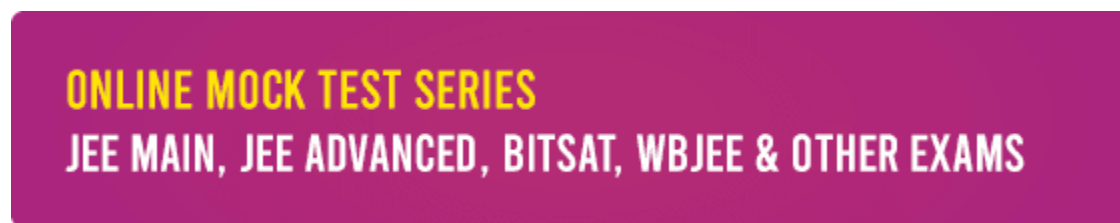
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