

JULY

3. Metals and Non-metalsAnswer the following: (VSA)

1. Give reasons for the following:

(a) School bells are made up of metals.

(b) Electric wires are made up of copper.

Ans:

(a) It is because metals are sonorous, (i.e.) produce sound when struck with a hard substance.

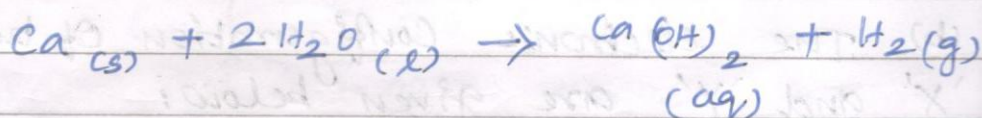
(b) It is because copper is good conductor of substance.

SHORT ANSWERS :

2. Explain why calcium metal after reacting with water starts floating on its surface. Write the chemical equation for the reaction. Name one more metal that starts floating after some time when immersed in water.

Ans:

Calcium starts floating because the bubbles of hydrogen gas formed stick to the surface of the metal.



Magnesium reacts with hot water and starts floating due to the bubbles of hydrogen gas sticking to its surface.

3. A teacher asks her students to identify a metal, M. She gives them the following clues to help them.

- Ans :

$$\text{Al}_2\text{O}_3 + \text{NaOH} \rightarrow 2\text{NaAlO}_2 + \text{H}_2\text{O}$$

(c) It would displace Iron to form aluminium oxide.

$$2\text{Al} + \text{Fe}_2\text{O}_3 \rightarrow \text{Al}_2\text{O}_3 + \text{Fe} + \text{Heat}$$

(c)

(i)  $KCl$  (ii)  $CaO$

$X : 2, 7$

$$Y: 2, 8, 1$$

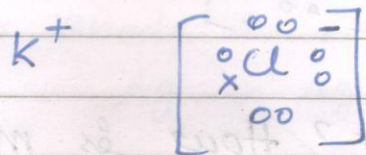
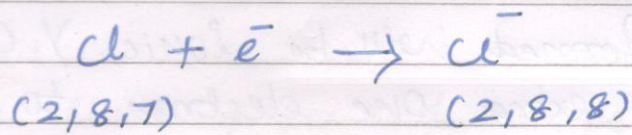
Ans :

(a) (i)  $KCl$

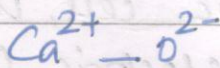
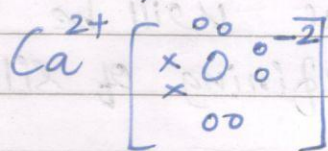
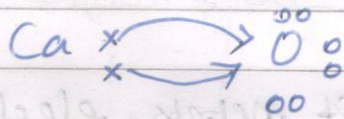
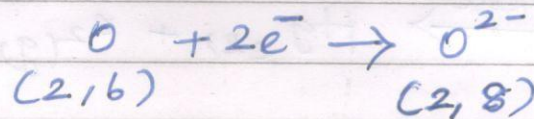
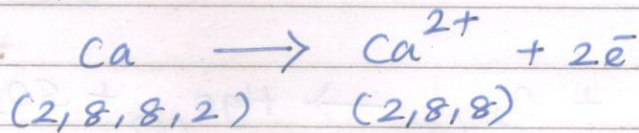


$(2, 8, 8, 1)$

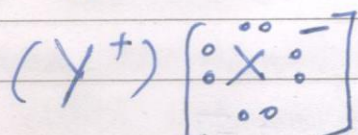
 $(2, 8, 8)$



(ii)  $\text{CaO}$



(b) The bond formed will be ionic. Y (2, 8, 1) will donate its extra one electron to X (2, 7), so that both of them will acquire stable electronic configuration.

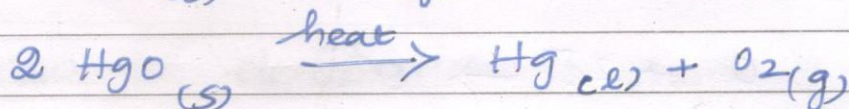
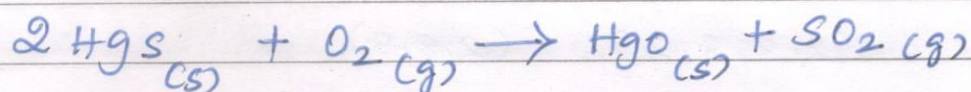


Long Answer :

5. What is Cinnabar? How is metal extracted from Cinnabar? Explain briefly.

Ans :

Cinnabar is HgS  
Mercury is obtained by roasting Cinnabar.  
HgO formed is thermally unstable and gives Mercury.



Mercury can be purified by distillation.

6. During extraction of metals, electrolytic refining is used to obtain pure metals.

(a) Which material will be used as anode and cathode for refining of silver metal by this process?

(b) Suggest a suitable electrolyte also.

(c) In this electrolytic cell, where do we get pure silver after passing electric current?

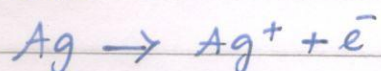
Ans:

(a) Pure silver rod will be used as cathode and impure silver rod will be used as Anode.

(b)  $\text{AgNO}_3$  (aq) can be used as electrolyte.

(c) Pure silver will be formed at cathode.

At anode :



At cathode :

