

**P C RAY GROUP**  
**VALUE BASED QUESTIONS**

Q.1 People are advised to limit the use of fossil fuels resulting in Green House Effect leading to a rise in the temperature of earth. Hydrogen provides an ideal alternative and its combustion in fuel cells.

- a. Write electrode reaction in  $H_2-O_2$  fuel cell.
- b. How is green house effect reduced by the use of fuel cells?
- c. Write the values associated with preference of using fuel cells to fossil fuel.

Q.2 In Apollo Space programs, hydrogen-oxygen fuel cell was used.

- (a) Explain why, fuel cell is preferred in space programme.?
- (b) Mention the values associated with the decision of using fuel cell?

Q.3 Ira a student of science went with her grandfather to buy a battery for their inverter and camera. They found two types of batteries, one a lead storage battery and other a Nickel-Cadmium storage battery. Later was more expensive but lighter in weight. Ira insisted to purchase costlier Nickels-Cadmium battery.

- (a) In your opinion, why Ira insisted for Nickel-Cadmium battery? Give reasons
- (b) Write the values associated with above decision?

Q.4 Shyam's father wants to buy a new car. In the market various options are available. Shyam persuades his father to buy a hybrid car which can run both on electricity as well as on petrol.

- a. Mention the values associated with this decision.
- b. Name the battery used for running the car.
- c. Write the reactions taking place at the anode and cathode of battery.

Q.5 Reema the student of class XII Science suggested her father to place a pouch of silica gel in the opening of iron pipes when he was preparing a shed for parking his car?

- a. How does Reema apply the knowledge of chemistry?
- b. What value was associated with this decision?
- c. How she shows the concern to society?

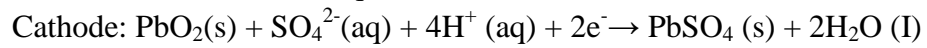
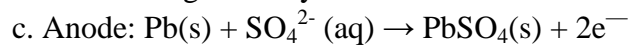
Ans.

1. a. Cathode:  $O_2(g) + 2H_2O(l) + 4e^- \rightarrow 4OH^-(aq)$

Anode:  $2H_2(g) + 4OH^-(aq) \rightarrow 4H_2O(l) + 4e^-$

- b. no any pollutant is being formed as product of cell reaction.
  - c. Environmental conservation
2. a. No any pollutant is formed only water is formed which is used for drinking purpose.
- b. Environmental conservation
3. a. Pollution free, No poisoning of lead as in lead storage battery.
- b Environmental conservation, Concern for workers associated with lead storage battery repairment.
4. a Environmental conservation, Energy Conservation

b. Lead Storage Battery



5. I. Silica gel is a good adsorbent therefore prevent from rusting.

ii. Knowledge is useful when it is put in practice.

iii. She shows her concern to the environment.