

Question 12

Which one of the following applies to a galvanic cell but not an electrolytic cell?

- A. The anode is positive.
- B. Reduction occurs at the cathode.
- C. Cations move towards the positive electrode.
- D. The cell reaction can always be reversed using electrical energy.

Question 13

Which of the following statements concerning biodiesel and petrodiesel is correct?

- A. Biodiesel and petrodiesel are both composed of non-polar hydrocarbon molecules.
- B. Biodiesel and petrodiesel produce the same major products when they undergo complete combustion.
- C. The viscosity and energy density of petrodiesel are both higher than those of biodiesel.
- D. Both biodiesel and petrodiesel are renewable energy sources.

Use the following information to answer Questions 14 and 15.

Using inert electrodes, three separate electrolysis experiments were conducted using 1.0 M solutions of the salts of the metals X, Y and Z. Each cell used a set current for the same time.

Question 14

The mole ratio of X, Y and Z deposited was found to be 3 : 1.5 : 1.

The ratio of the charge on the ions of the metals X, Y and Z is likely to be

- A. 1 : 2 : 3.
- B. 3 : 2 : 1.
- C. 1 : 1 : 1.
- D. identical to the mass ratio of the metals X, Y and Z deposited.

Question 15

The experiment was repeated under identical conditions except that 2.0 M solutions of the metal salts were used.

Which of the following quantities would show no change in the results for this experiment compared to the original experiment?

- I the mass of each metal deposited
 - II the final concentration of each electrolyte
 - III the charge moving through each cell
- A. I and II only
 - B. II and III only
 - C. I and III only
 - D. I, II and III