

## **Q1. Machine Learning**

Machine learning is the subset of artificial intelligence (AI) focused on algorithms that can “learn” the patterns of training data and, subsequently, make accurate *inferences* about new data. This pattern recognition ability enables machine learning models to make decisions or predictions without explicit, hard-coded instructions.

## **Q2. Photosynthesis**

Plants are called autotrophs because they can use energy from light to synthesize, or make, their own food source. Many people believe they are “feeding” a plant when they put it in soil, water it, or place it outside in the Sun, but none of these things are considered food. Rather, plants use sunlight, water, and the gases in the air to make glucose, which is a form of sugar that plants need to survive. This process is called photosynthesis and is performed by all plants, algae, and even some microorganisms. To perform photosynthesis, plants need three things: carbon dioxide, water, and sunlight.

## **Q3. Raja Raja Cholan**

**Rajaraja II** was a [Chola](#) emperor who reigned from 1150 to 1173. He was made his heir apparent and co-regent in 1146 and so the inscriptions of Rajaraja II count his reign from 1146. Rajaraja's reign began to show signs of the coming end of the dynasty.

## **Q4. Women Empowerment**

Women empowerment is the process of granting women equal rights, opportunities, and authority to make life-determining decisions, liberating them from socio-economic, political, and gender-based discrimination. It

involves achieving gender parity, promoting self-worth, and ensuring access to education and resources. Empowering women is crucial for sustainable development, economic growth, and reducing violence against women.

## **Q5. Traffic singnal**

A traffic signal (or traffic light) is a power-operated, automated signaling device placed at road intersections and pedestrian crossings to control the flow of traffic. Using, traditionally, three colors—red (stop), yellow (slow down/prepare to stop), and green (go)—it manages vehicles and pedestrians to ensure orderly, safe movement and reduce accidents.