

### 1.What is Machine Learning?

Machine learning (ML) is a subset of artificial intelligence (AI) that enables systems to automatically learn, improve, and make predictions or decisions from data without being explicitly programmed for every specific task. By analyzing patterns in large datasets, ML algorithms refine their performance over time, allowing them to adapt to new information.

### 2.What is photosynthesis?

Photosynthesis is the essential biological process where green plants, algae, and certain bacteria convert light energy into chemical energy. Using chlorophyll to trap sunlight, these organisms transform carbon dioxide and water into glucose (sugar) for food, releasing oxygen as a vital byproduct.

### 3.Who is raja raja cholan?

[Raja Raja Chola I](#) (reigned 985–1014 CE) was the greatest emperor of the South Indian Chola dynasty, renowned for transforming it into a dominant military, naval, and cultural power. He expanded the empire across southern India, including Sri Lanka and the Maldives. He is famously remembered for constructing the [magnificent Brihadisvara Temple in Thanjavur](#), pioneering land surveys, and enhancing administrative efficiency.

### 4.Brief note on 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.

### 5.Explain traffic signal?

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.

#### **Key Aspects of Traffic Signals:**

- **Purpose:** To manage traffic, prevent accidents, and improve road safety.
- **Components:** Typically vertical or horizontal lights (red, yellow, green) and sometimes pedestrian countdown timers or arrows

- **Color Meanings:**
  - **Red:** Stop.
  - **Yellow/Amber:** Slow down or prepare to stop.
  - **Green:** Go/proceed.
- **Operation:** Can be fixed-time or triggered (activated by sensors detecting vehicles/pedestrians).
- **Types:** Standard three-color, pedestrian,, and turning lane signals.

In addition to electric lights, traffic signals can sometimes refer to manual traffic control by authorized personnel, such as police officers using hand signals.