**Q.1) Mention key features of M2M.**

🡺 Machine-to-Machine (M2M) communication enables automated data exchange between devices, facilitating remote monitoring, control, and efficiency across diverse industries while ensuring security and interoperability.

**Q.2) Explain the Proximity Sensor.**

**🡺** A proximity sensor is a device that detects the presence or absence of nearby objects without physical contact. It works by emitting electromagnetic fields, light, or sound waves and then sensing changes in these fields or waves caused by the proximity of an object. Common types include capacitive, inductive, ultrasonic, and infrared sensors

**Q.3) Give 2 differences between TCP and UDP.**

- TCP is a connection-oriented protocol, whereas UDP is a connectionless protocol.

- TCP uses handshake protocol like SYN, SYN-ACK, ACK while UDP uses no handshake protocols.

- TCP is reliable as it guarantees the delivery of data to the destination router while in UDP The delivery of data to the destination cannot be guaranteed.

**Q.4) Define CIA triad.**

The CIA triad is a fundamental concept in information security, comprising three core principles:

* Confidentiality (ensuring data is accessible only to authorized individuals),
* Integrity (maintaining the accuracy and trustworthiness of data),
* and Availability (ensuring data is accessible and usable when needed).

**Q.5) Explain Predictive and Prescriptive Analytics.**

**Predictive analytics** involves using historical data, statistical algorithms, and machine learning techniques to predict future outcomes or trends. It analyzes patterns and relationships within data to forecast what might happen in the future, often providing probabilities or likelihoods of different outcomes.

**Prescriptive analytics,** on the other hand, goes beyond predicting future outcomes to provide recommendations on what actions to take to achieve a desired outcome. It considers various possible actions and their potential outcomes, taking into account constraints, objectives, and preferences to offer actionable insights and decision support.

**Q.6) Explain IaaS, PaaS and SaaS.**

**Q.7) Explain IPv4 and IPv6.**

**IPv4 (Internet Protocol version 4)** is the fourth version of the Internet Protocol, which assigns numerical addresses to devices connected to a network. It uses 32-bit addresses, allowing for approximately 4.3 billion unique addresses. However, due to the rapid growth of the internet, IPv4 addresses are running out, leading to the development of IPv6.

**IPv6 (Internet Protocol version 6**) is the latest version of the Internet Protocol designed to address the limitations of IPv4. It uses 128-bit addresses, providing an exponentially larger address space, capable of accommodating an almost limitless number of devices. IPv6 also offers improved security, efficiency, and support for emerging technologies like Internet of Things (IoT). However, widespread adoption of IPv6 has been relatively slow compared to IPv4.

**Q.8) Mention 4 applications of WSN.**

* Environmental Monitoring
* Industrial Automation
* Healthcare and Medical Applications
* Smart Cities

**Q.9) Explain IOT Communicational Model.**

* Request-Response Model
* Publish-Subscribe Model
* Push – pull Model
* Exclusive Pair

**Q.10) Give 2 difference between Sensors and Actuators.**