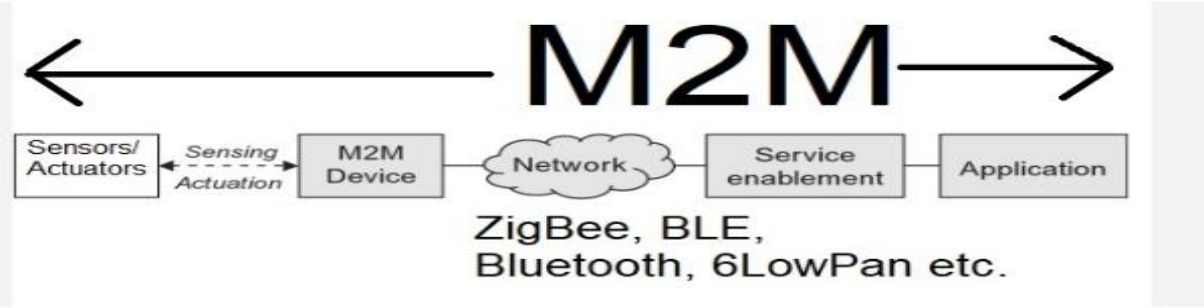
UNIT II

IoT ARCHITECTURE

1. What is oneM2M in IoT architecture?

Answer: oneM2M is a global standardization initiative for Machine-to-Machine (M2M) communications and the Internet of Things (IoT), providing a common platform that enables devices and applications to communicate, irrespective of the underlying network.



2. What is the IoT World Forum (IoTWF) Reference Model?

Answer: The IoT World Forum (IoTWF) Reference Model is a seven-layered architecture model designed to guide the development and implementation of IoT solutions, from devices and network connectivity to data analytics and application services.

3. What is the ETSI M2M high-level architecture?

Answer: The ETSI M2M high-level architecture defines a framework for IoT systems, focusing on standardized interfaces and modules to support interoperability between devices, applications, and networks, facilitating seamless communication in M2M environments.

4. Describe the IETF Architecture for IoT.

Answer: The IETF Architecture for IoT emphasizes the use of standard Internet protocols for IoT communication, focusing on lightweight protocols like CoAP, IPv6, and RPL to ensure efficient data transmission and resource-constrained device connectivity.

5. What is the OGC Architecture in IoT?

Answer: The OGC (Open Geospatial Consortium) Architecture in IoT is focused on geospatial and location-based services, providing standards and protocols for integrating geographic information with IoT systems, enabling spatial data sharing and processing.

6. Define the IoT Reference Model.

Answer: The IoT Reference Model is a conceptual framework that outlines the essential components and their interactions within an IoT system, providing a standardized approach for designing and deploying IoT solutions across various domains.

7. What is the Domain Model in IoT?

Answer: The Domain Model in IoT defines the specific entities, their relationships, and the domain-specific rules within an IoT system, ensuring that the system architecture meets the requirements of a particular industry or application area.

8. What is the Information Model in IoT?

Answer: The Information Model in IoT represents the structure, relationships, and constraints of the data managed within the IoT system, facilitating consistent data interpretation and exchange between different system components.

9. Explain the Functional Model in IoT.

Answer: The Functional Model in IoT outlines the functions and capabilities required by an IoT system, detailing how the various components work together to achieve the desired system operations and services.

10. What is the Communication Model in IoT?

Answer: The Communication Model in IoT describes the protocols, interfaces, and data flows used for communication between devices, networks, and cloud services within the IoT ecosystem, ensuring seamless and reliable data exchange.

11. What is NETCONF in IoT system management?

Answer: NETCONF (Network Configuration Protocol) is a protocol used in IoT for managing and configuring network devices, providing mechanisms for retrieving, manipulating, and editing device configurations.

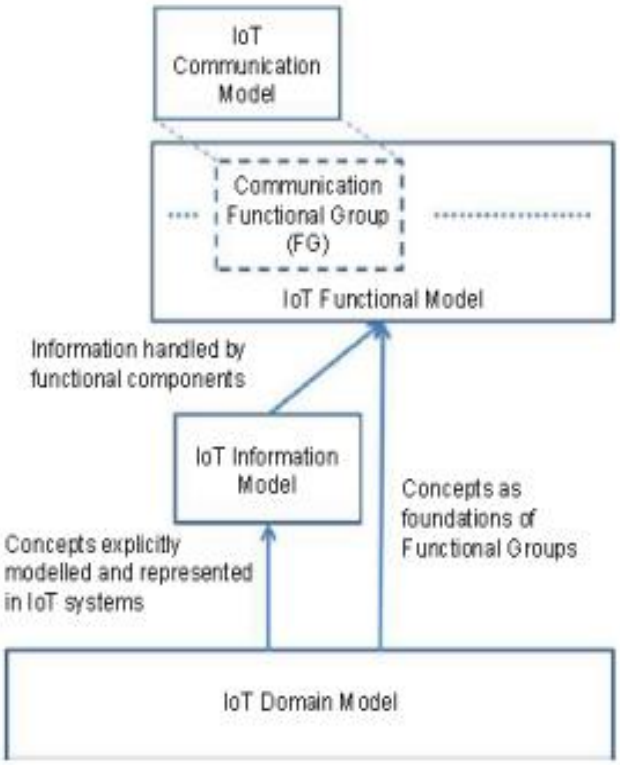
12. What is YANG in IoT system management?

Answer: YANG (Yet Another Next Generation) is a data modeling language used in IoT for defining the structure of configuration and state data, which can be used by NETCONF for efficient device management and operation in networked systems.

13. List out the two functions of YANG in IoT system management

YANG functions in IoT system management by (1) defining the structure and constraints of configuration and state data for network devices, and (2) enabling efficient communication and management of these devices through protocols like NETCONF.

14. Outline the functional block of an IoT Reference Model



15. What are the benefits of NETCONF for IoT management?

NETCONF benefits IoT management by (1) providing a standardized protocol for configuring and managing network devices, ensuring consistent and reliable operations, and (2) supporting dynamic and secure configuration changes through its XML-based data model, which enhances operational efficiency and reduces errors.