Internet of Things (IoT) - Predicted Questions & Strategy

PART A - Short Answer Predictions (10 x 2 = 20 Marks)

1. Difference between IoT and M2M
2. Define Fog Computing (Repeated in both papers)
3. Define Centralized Network Controller
4. List any 2 applications of IoT
5. Any 2 characteristics of Edge Analytics
6. List the sensors required for detecting air pollution
7. Why is Zigbee better than Bluetooth?
8. What is Software Defined Storage?
9. List any four limitations of SNMP protocol
10. Define Push-Pull Communication Model

PART B - Long Answer Predictions (4 x 15 = 60 Marks)

Choose any 4 of the following based on your comfort. Prepare with neat diagrams.

1. Difference between IoT and M2M & architecture of NETCONF protocol
2. Building blocks of IoT devices with Raspberry Pi sketch
3. Mobile technologies supporting IoT ecosystem
4. Protocol stack of BLE with neat diagram
5. Importance of IoT data analytics with real-world examples
6. SDN and NFV for virtualizing IoT infrastructure

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PART C - Compulsory Question (1 x 20 = 20 Marks)

Choose one based on comfort level:

Option A (May 2024):

- IoT system for Home Intrusion Detection (using sensors and alerts)
- Python program given as assignment - check out assignment question.
- Diagram for home automation system

Option B (Nov 2024):

- IoT Design Methodology with steps and diagram
- Protocols for IoT Service Discovery with diagram

Tips to Score 50/100 Easily

- Focus on repeated and syllabus-matching questions.
- Python program given as assignment - check out assignment question.
- Revise definitions and differences for scoring easy Part A marks.

Additional Important Topics to Prepare

1. IoT Levels and Applications:
   - Understand the 3-level architecture: Perception, Network, and Application layers.
   - Examples: Smart Homes, Smart Cities, Industrial IoT, Agriculture, Healthcare.

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2. DBMS vs DSMS:

- DBMS: Stores persistent data, supports transactions.
- DSMS: Handles continuous data streams in real time (e.g., sensor data).
- Key difference: Static queries on dynamic data (DSMS) vs. dynamic queries on static data (DBMS).

3. State-of-the-Art IoT Platforms:

- Examples: Google Cloud IoT, AWS IoT, Microsoft Azure IoT Hub.
- Features: Device management, data ingestion, security, analytics.

4. IoT Prototyping Process:

- Steps: Idea -> Component selection -> Circuit design -> Microcontroller programming -> Integration -> Testing.
- Tools: Arduino, Raspberry Pi, NodeMCU.

5. IoT Applications (UNIT 2):

- Focus on M2M, network operator requirements, IoT system management.
- Study: SNMP, NETCONF, YANG, and IoT system design model.