

B. TECH
(SEM VI) THEORY EXAMINATION 2022-23
IOT ARCHITECTURE AND PROTOCOLS

Time: 3 Hours**Total Marks: 100****Note:** Attempt all Sections. If require any missing data; then choose suitably.

SECTION A

1. Attempt all questions in brief.**2 x 10 = 20**

- (a) Give an outline of IoT architecture.
- (b) Explain Everything as a Service (XaaS).
- (c) What is the difference between functional & Information view.
- (d) What is the requirement of IoT protocol standardization?
- (e) Why do IoT system have to be self-adapting and self-configuring?
- (f) Explain WirelessHART.
- (g) What is Zigbee?
- (h) Explain Constrained Application Protocol (CoAP).
- (i) Explain the different characteristics of IoT.
- (j) How RPL is useful in IoT implementation?

SECTION B

2. Attempt any three of the following:**10x3=30**

- (a) Why security required in IoT? Explain in detail various security in IoTs.
- (b) How does M2M relate to IoT? Discuss the differences between these two in detail.
- (c) Write in detail business model scenario for Internet of Things.
- (d) Explain Real-World & Technical Design constraints in detail.
- (e) Explain Transport & Session Layer protocols.

SECTION C

3. Attempt any one part of the following:**10x1=10**

- (a) Explain the main design principles and needed capabilities of IOT.
- (b) Explain the application of IoT in home automation systems.

4. Attempt any one part of the following:**10x1=10**

- (a) Explain MQTT protocol with example. Discuss the role of MQTT protocol in IOT?
- (b) Explain IoT reference model & architecture in detail.

5. Attempt any one part of the following:**10x1=10**

- (a) Explain IoT Data Link & Network Layers protocol in detail.
- (b) Explain 6LoWPAN and its type in detail.

6. Attempt any *one* part of the following: 10x1=10

- (a) List layers of IoT protocol stack. Discuss the disadvantages of IoT?
- (b) What is identity management in Internet of Things? Explain any two identity management techniques of IoT.

7. Attempt any *one* part of the following: 10x1=10

- (a) Explain XMPP and AMQP protocols.
- (b) Write a short note on:
 - (i) MAC 802.15.4
 - (ii) Application Layer

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