

7. Write notes on the following :

- (i) Security and Privacy for IoT
- (ii) Designing apache for handling HTTP requests
- (iii) Point to multi-point data transfer.

Roll No. ....

Total Pages : 04

**009602**

**May 2024**

**B. Tech. (EIC) (Sixth Semester)**

**Internet of Things (EIEL-601)**

*Time : 3 Hours]*

*[Maximum Marks : 75*

**Note :** It is compulsory to answer all the questions (1.5 marks each) of Part A in short. Answer any *four* questions from Part B in detail. Different sub-parts of a question are to be attempted adjacent to each other.

**Part A**

1. (a) What are the open protocols, tools and frameworks generally used in M2M ? **1.5**
- (b) Define MySQL server instance and client. **1.5**
- (c) What are the protocols needed in web connectivity in IoT applications ? **1.5**
- (d) What is MAC address ? How does a MAC address assign to an IoT node ? How does address resolved to enable packets in IP network reach the node ? **1.5**

- (e) Explain, why IoT device nodes use RPL in place of IPV6 or IPV4. 1.5
- (f) What are open protocols, tools and framework generally used in M2M. 1.5
- (g) What are architectural layers in a modified OSI model for internet of things applications? 1.5
- (h) What is a cloud? What is the role of cloud platforms in IoT? 1.5
- (i) How do database and relation data base differ? 1.5
- (j) How is mobile internet used in IoT and M2M application? 1.5

### Part B

2. (a) Draw the architecture of Intel Galileo board and list the usage of each component. 10
- (b) Show and explain the header fields in a 6LoWPAN frame and IP Packet. 5

3. (a) What does the fourth Industrial Revolution entail? What is the difference between Industry 4.0 and the Internet of Things (IoT)? 5
- (b) Specify function of CoAp, RESTful HTTP, MQTT and XMPP in IoT applications. 10
4. Explain the deployment and operational view, resources, services, virtual entities, users in an IoT system by considering a Parking IoT example. 15
5. (a) Write a program to toggle a string in MySQL. 5
- (b) Show the architectures of sensors and actuators with Raspberry Pi board connected to gateway using WiFi for internet of streetlights applications. 10
6. (a) Explain TCP/IP vs. IoT protocol stack. Explain with example MQTT Protocol. What is role of MQTT protocol in IoT? 10
- (b) Enlist difference between DDL and DML commands. Also give examples of TCL and DCL commands. 5