



ADAMAS UNIVERSITY
END (EVEN) SEMESTER EXAMINATION: MAY 2021
(Academic Session: 2020 – 21)

Name of the Program:	B. Tech	Semester:	VIII
Paper Title:	Elective -VI (Internet of Things)	Paper Code:	EEC 61128
Maximum Marks:	40	Time duration:	3 Hrs
Total No of Questions:	10	Total No of Pages:	02
(Any other information for the student may be mentioned here)	<ol style="list-style-type: none">1. At top sheet, clearly mention Name, Univ. Roll No., Enrolment No., Paper Name & Code, Date of Exam.2. All parts of a Question should be answered consecutively. Each Answer should start from a fresh page.3. Assumptions made if any, should be stated clearly at the beginning of your answer.		

Answer all the Groups

Group A

Answer all the questions of the following

5 × 1 = 5

1.
 - a) What is the full form of 6LowPAN?
 - b) What is a “Thing” in the context of the Internet of Things (IoT)?
 - c) What is the sensor/protocol used in Global Sensor Network (GSN)?
 - d) What is the full form of AMQP protocol?
 - e) What do we aim to protect using cybersecurity? What is the full form of MQTT?

GROUP –B

Answer any three of the following

3 × 5 = 15

2. Explain in detail the IoT architecture with neat diagram. **[5]**
3.
 - a) Explain the frequency of operation as well as two topologies of Bluetooth.
 - b) What are the relative advantages and disadvantages of persistent and non-persistent CSMA? **[3+2]**
4.
 - a) What are the challenges and issued in RFID system?
 - b) Explain MQTT publish subscribe model with the help of suitable block diagram. Explain the role of Publisher, Broker, and Topics in this model. **[3+2]**
5.
 - a) What is the full form of CoAP and it is connected to which layer?
 - b) Explain the four message types supported by CoAP protocol with suitable diagram for each. **[5]**
6.
 - a) Explain the need of Data security, Network security, Application security, and End-user education security in case of an IoT system with the help of suitable block diagram.
 - b) What is Sketch in context of Arduino? What is the main advantage of using Arduino board? **[5]**

GROUP –C

Answer *any two* of the following

2 × 10 = 20

7. a) Mention one IPv6 protocol for the low power devices and explain the working function of it.
b) What is the difference between M2M and IoT? How does IoT influence the development of smart cities?
c) Explain the different IoT security challenges. **[3+5+2]**
8. a) Differentiate between Arduino and Raspberry pi. What is the connection between IoT and sensors in the commercial enterprise?
b) What is REST based communication Application Programming Interface (API)? Explain how the communication is possible between client and server using REST API's.
c) How might wireless communications have an effect on the development and implementation of the internet of things (IoT)? **[4+4+2]**
9. a) Draw and explain the block diagram of an IoT enabled smart device. Also, explain the various processes that are implemented on the collected data as well as the provisions for connection of a single IoT device with its neighbouring IoT devices.
b) What is Cloud computing? What is its role in IoT? Explain the three (SaaS, PaaS, and IaaS) service models for cloud. **[6+4]**
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