	ADAMAS UNIVERSITY **END SEMESTER EXAMINATION** (Academic Session: 2020 – 21)		
Name of the Program:	M. TECH	**Semester:**	II
Paper Title:	Electrical & Electronics Technology	**Paper Code:**	EEC21345
Maximum Marks:	50	**Time Duration:**	3 Hrs
Total No. of Questions:	17	**Total No of Pages:**	03
(Any other information for the student may be mentioned here)	**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.		

Group A **Answer All the Questions (5 x 1 = 5)**			
1	What is the full form of 6LowPAN?	**R**	**CO4**
2	What is a "Thing" in the context of the Internet of Things (IoT)?	**U**	**CO5**
3	What is the sensor/protocol used in Global Sensor Network (GSN)?	**U**	**CO6**
4	What is the full form of AMQP protocol?	**R**	**CO4**
5	What do we aim to protect using cybersecurity? What is the full form of MQTT?	**R**	**CO5**
Group B **Answer All the Questions (5 x 2 = 10)**			
6 a)	Explain in detail the IoT architecture with neat diagram.	**U**	**CO2**
(OR)			
6 b)	Explain the frequency of operation as well as two topologies of Bluetooth (Piconet and Scatternet).	**AN**	**CO1**
7 a)	Explain Moore's Law in your own words.	**U**	**CO2**
(OR)			
7 b)	Compare a smart device to an intelligent device.	**AN**	**CO3**
8 a)	Explain MQTT publish subscribe model with the help of suitable block diagram. Explain the role of Publisher, Broker, and Topics in this model.	**U AN**	**CO3**
(OR)			
8 b)	What is the full form of CoAP and it is connected to which layer?	**R U**	**CO4**
9 a)	Explain the four message types supported by CoAP protocol with suitable diagram for each.	**U**	**CO5**
(OR)			
9 b)	Explain Metcalfe's Law with suitable example.	**U**	**CO5**
10 a)	What is Sketch in context of Arduino? What is the main advantage of using Arduino board?	**R**	**CO1**
(OR)			
10 b)	What is the need of switching in large networks? Explain with suitable diagrams.	**U**	**CO2**
Group C **Answer All the Questions (7 x 5 = 35)**			

11 a)	What is the need for AMQP protocol? Explain the three message delivery guarantees associated with AMQP.	**AN**	**CO1**
(OR)			
11 b)	Explain the different IoT security challenges.	**U**	**CO2**
12 a)	Differentiate between Arduino and Raspberry pi in tabular form.	**AN**	**CO3**
(OR)			
12 b)	Explain the following cybersecurity threats with brief explanation for each: i) Ransom-ware ii) Malware iii) Phishing	**C**	**CO2**
13 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.	**R**	**CO3**
(OR)			
13 b)	What is ambiguity in AI enabling IoT? Explain	**U**	**CO3**
14 a)	Explain Koomey's law in your own words.	**C**	**CO3**
(OR)			
14 b)	Explain and Enlist four characteristics of IoT devices.	**U**	**CO4**
15 a)	Explain RSB arithmetic operation with the help of suitable diagram.	**U**	**CO5**
(OR)			
15 b)	Write a sample program (Pseudocode) in assembly language to read a data from an input port (IN), then add this value with the content of register E and multiply with a constant value (10) and send the computed data to an output port	**AP**	**CO5**
16 a)	Compare AMQP protocol with MQTT Protocol in tabular form.	**R, C**	**CO5**
(OR)			
16 b)	Explain the following topologies with the aid of suitable diagrams: i) Ring ii) Hybrid. Also discuss their advantages and disadvantages in your own words.	**U, C**	**CO4**
17 a)	Explain Barrel Shifter operation in case of ARM Processor with suitable diagrams and explanations.	**AP**	**CO3**
(OR)			
17 b)	Explain about the 9 different frame types used in the AMQP Protocol.	**U**	**CO3**