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ANNA UNIVERSITY (UNIVERSITY DEPARTMENTS)

B.E. /B.Tech / B. Arch (Full Time) - END SEMESTER EXAMINATIONS, NOV/DEC 2024

VII Semester
IT5792 –IOT BASED SMART SYSTEMS
(Regulation2019)

Time:3hrs

Max.Marks: 100

CO1	Understand the evolution of internet and the impact of IoT on society
CO2	Apply appropriate protocols in various parts of IoT based systems
CO3	To design and build a small low cast using RasberyPI and open source platform
CO4	To apply the concept of IoT in real world scenarios
CO5	Use cloud offerings and big data tools in IoT based systems
CO6	Design and Analyze applications of IoT in real time scenario

BL – Bloom's Taxonomy Levels

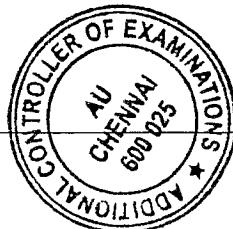
(L1-Remembering, L2-Understanding, L3-Applying, L4-Analysing, L5-Evaluating, L6-Creating)

PART- A(10x2=20Marks)
(Answer all Questions)

Q.No	Questions	Marks	CO	BL
1	Draw a generic block diagram of an IOT system	2	CO1	L1
2	Discuss about M2M technologies	2	CO1	L1
3	Name the IEEE standard protocol used for IOT communication and list its advantages	2	CO2	L2
4	Write a sketch to read analog data from pin 4 of Arduino board and display it in serial monitor	2	CO3	L3
5	Write a python code to make LED connected at GPIO pin 5 of Raspberry PI to blink with ten seconds ON and fifteen seconds OFF interval	2	CO3	L3
6	Compare MQTT and COAP protocols	2	CO2	L2
7	Discuss briefly about WIFI technology	2	CO4	L1
8	Discuss the need for cloud in IOT data storage and data analytics	2	CO5	L2
9	Name the technology used in Metro railway card. Justify your answer	2	CO6	L2
10	List out four different tasks to be addressed for home automation system	2	CO4	L2

PART- B(5x 13=65 Marks)
(Restrict to a maximum of 2 subdivisions)

Q.No	Questions	Marks	CO	BL
11 (a)	(i) Discuss briefly about different IOT levels. (ii) Explain in detail about IOT level 4 with one example	4 9	CO1 CO1	L2 L2
	OR			
11 (b)	(i) Discuss about sensors and actuators (ii) Discuss in detail about principles of operation of two sensor and two actuator	4 9	CO1 CO1	L2 L2
12 (a)	Discuss about RASBERRY PI board with pin diagram Write a python program to switch ON lights of the room connected at pin 5 when light sensor (pin 6) senses brightness below threshold set by user. Also green LED connected at pin 8 should glow when light is on. A red LED connected at pin 7 is always ON to indicate system status. (system on state). Draw connection diagram with pin details accordingly.	13	CO3	L3
	OR			
12 (b)	Discuss in detail about different communication models used for IOT communication with examples.	13	CO2	L2
13 (a)	Discuss in detail about RFID technology and explain its usage in tracking objects	13	CO6	L3
	OR			
13(b)	Discuss briefly about different devices in zigbee network and explain different topologies adopted in zigbee networking. Mention one suitable place for zigbee network and explain its operation	13	CO1	L2, L3
14 (a)	Discuss the use of data analytics in weather forecasting using IOT sensors with block diagram	13	CO6 CO5	L3 L5
	OR			
14 (b)	Discuss in detail about cloud services. Explain how cloud services utilized in IOT application with one example	13	CO5 CO6	L3 L5



15.a	Discuss about smart city and its features need to be addressed. Discuss briefly about four features implementation with IOT usage.	13	CO6	L3
OR				
15.b	Discuss about smart agriculture using IOT with block diagram, methodology and implementation	13	CO6	L3

PART- C(1x 15=15Marks)
(Q.No.16 is compulsory)

Q.No	Questions	Marks	CO	BL
16.	Design an IOT based flood alert system which should inform alert to Public , public work office, disaster management office and essential administrators through messages during flood. Find suitable IOT level and design using suitable IOT devices and components (justify them). Draw architecture diagram, write pseudo code for implementation of the system. Explain in detail all operations.	15	CO1 CO2 CO3 CO4 CO5 CO6	L6

