ode: 20EC612OE

SET-I

HT NO: | | | 7 | R | | | | | |

CMR TECHNICAL CAMPUS

UGC AUTONOMOUS

B. Tech. VI Semester Regular End Examinations, May-2023

Fundamentals of IOT

Common to CSE,IT&CSM

Time: 3 Hours **Max. Marks: 70**

Note

i. This Question paper contains Part- A and Part- B.
ii. All the Questions in Part A are to be answered compulsorily.
iii. All Questions from Part B are to be answered with internal choice among them.

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PART-A

10 X 02 = 20 Marks

			Marks	CO	BL
1.	a	What is the role of things and internet in IoT?	2M	CO1	L2
	b	Write a short note on sensor networks.	2M	CO1	L2
	c	Write a short note on Arduino IDE Overview.	2M	CO2	L2
	d	Why do we require Interoperability.	2M	CO2	L4
	e	Define the packages in python	2M	CO3	L1
	f	What are the different operations in python.	2M	CO3	L2
	g	What is Hadoop and what are the aspects of Hadoop Technology	2M	CO4	L2
	h	What does SDN mean?	2M	CO4	L2
	i	What is IIOT? And how it is related to IOT?	2M	CO5	L1
	j	What are Wireless Sensor Networks and its limitations.	2M	CO5	L2

PART- B

5 X 10 = 50 Marks

			Marks	CO	BL
2.	a	Explain the characteristics and applications of IoT in detail	5M	CO1	L2
	b	Write a short note on Basics of Networking	5M	CO1	L2
		OR			
3	a	Explain different types of IOT Communication models?	7M	CO1	L1
	b	Differentiate between sensors and actuators	3M	CO1	L2
4	a	Differentiate between IoT and M2M	5M	CO2	L2
	b	Sketch the DHT Sensor with its implementation.	5M	CO2	L3
		OR			
5	a	Write a short note on semantic interoperability for device interaction with an example.	5M	CO2	L4
	b	Sketch on Traffic light control system and Blinking LED using Ardunio	5M	CO2	L2

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6	a	Illustrate RaspberryPi Peripherals	5M	CO3	
	b	Draw and explain the pin diagram of RaspberryPi.	5M	CO3	
		OR			
7	a	Briefly explain the functions in python. Give an example for each function.	5M	CO3	L3
	b	Write about SPI and I2C in detail.	5M	CO3	L2
8	a	Write a program for Remote data logging using DHT22 interfaced with RaspberryPi?	5M	CO4	L4
	b	How SDN is originated? What are the basic components of SDN?	5M	CO4	L2
		OR			
9	a	What are different statistical models for data analytics ?	5M	CO4	L3
	b	How data is categorized and What are the characteristics of BigData.	5M	CO4	L2
10	a	What is a connected vehicle and what are the challenges associated with connected vehicles	5M	CO5	L2
	b	What are the properties of Smart Grid and how does the architecture of smart grid look like.	5M	CO5	L3
		OR			
11	a	Explain Sensor cloud ?	5M	CO5	L3
	b	What is the traditional architecture of activity monitoring system and its advantages, mention the important human activities that can be monitored.	5M	CO5	L4

CO : Course Outcomes

BL : Bloom's Taxonomy Levels

L 1 : Remembering **L 2 : Understanding**

L 3 : Applying **L 4 : Analysing**

L 5 : Evaluating **L 6 : Creating**

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B.Tech.VI Semester Supply End Examinations, January-2024

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Time: 3 Hours **Max. Marks: 70**

Note

i. This Question paper contains Part- A and Part- B.
ii. All the Questions in Part A are to be answered compulsorily.
iii. All Questions from Part B are to be answered with internal choice among them.

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PART-A

10 X 02 = 20 Marks

			Marks	CO	BL
1.	a	List the Applications of IoT.	2	CO1	1
	b	List the "things" in IoT and explain briefly.	2	CO1	2
	c	Define M2M.	2	CO2	1
	d	Give some examples of communication protocols used in IoT and M2M.	2	CO2	2
	e	List Raspberry Pi interfaces.	2	CO3	1
	f	Explain the Serial Raspberry Pi interface in detail.	2	CO3	2
	g	Differentiate Raspberry with Arduino.	2	CO4	2
	h	What does SDN stand for?	2	CO4	1
	i	List out the characteristics of cloud computing?	2	CO5	1
	j	Explain about a Smart Parking System	2	CO5	2

PART- B

5 X 10 = 50 Marks

			Marks	CO	BL
2.	a	Design the protocol layer of IoT and explain various protocols used in each layer.	5	CO1	6
	b	List and explain the characteristics of IoT.	5	CO1	2
		OR			
3	a	Give a brief note on IoT Communication Models.	5	CO1	4
	b	Summarise the various IoT Enabled technologies.	5	CO1	2
4	a	Explain Modified OSI Stack for the IoT/M2M Systems	5	CO2	5
	b	Explain the following with respect to Arduino Programming (i) Structure (ii) Function	5	CO2	3

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OR

5	a	Examine the process of using the Integrated Development Environment (IDE) to prepare an Arduino sketch.	5	CO2	3
	b	Analyze the purpose of Sensors, Actuators and Smart Objects.	5	CO2	4
6	a	Describe the relative strengths and limitations of Building IOT with Raspberry Pi.	5	CO3	4
	b	List the essential requirements for setting up Raspberry Pi.	5	CO3	1
		OR			
7	a	Write in detail the Steps to interface Raspberry Pi with sensors.	5	CO3	3
	b	Examine and Conclude on controlling LED with Raspberry Pi.	5	CO3	4
8	a	Explain key elements of SDN & SDN for IoT	5	CO4	5
	b	Explain in detail the need and types of Data Analytics for IoT and brief the challenges faced by IoT Data Analytics.	5	CO4	2
		OR			
9	a	Describe the relative strength and limitation of Building IOT with RASPERRY PI	5	CO4	4
	b	Explain the functions of Data Analytics	5	CO4	2
10	a	What are the different smart technologies used for the development of IoT applications.	5	CO5	1
	b	Formulate the significant use of Raspberry Pi in Smart cities and Industrial appliances.	5	CO5	6
		OR			
11		Prepare an IoT strategy for smart city and design the layered architecture for implementing smart cities.	10	CO5	6

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