Q. Code: 801171

Reg. No. | | | | | | | | | | | | | |

M.E / M.TECH. DEGREE EXAMINATIONS, MAY 2024

Second Semester

CP22203 – INTERNET OF THINGS

(M.E Computer Science and Engineering)

(Regulation 2022)

TIME: 3 HOURS **MAX. MARKS: 100**

COURSE OUTCOMES	STATEMENT	RBT LEVEL
CO 1	Students will be able to realize the Architecture and Components.	**2**
CO 2	Students will be able to frame connectivity to access/control IoT devices.	**3**
CO 3	Students will be able to construct a portable IoT using Raspberry Pi.	**3**
CO 4	Students will be able to produce secured models of an IoT application.	**3**
CO 5	Students will be able to examine applications of IoT in real-time scenarios.	**3**

PART- A (20 x 2 = 40 Marks)

(Answer all Questions)

		CO	RBT LEVEL
1.	List out the different characteristics of IoT.	**1**	**2**
2.	Discuss about the sensor types with an example.	**1**	**2**
3.	Give the needs for Smart Creatures.	**1**	**2**
4.	Differentiate Operational Technology and Information Technology.	**1**	**2**
5.	Define Zigbee.	**2**	**2**
6.	Write short notes on Star, Peer-to-Peer, and Mesh Topologies.	**2**	**2**
7.	Write about IEEE 802.15.4.	**2**	**2**
8.	Infer the need for Optimization.	**2**	**3**
9.	How is Raspberry Pi different from a desktop computer.	**3**	**2**

10.	Illustrate the interfaces in Raspberry Pi.	**3**	**3**
11.	Discuss about Linux on Raspberry Pi.	**3**	**2**
12.	Compare the features of Arduino and Raspberry Pi.	**3**	**3**
13.	Elaborate on Structured and Unstructured Data.	**4**	**3**
14.	Differentiate Local Learning and Remote Learning.	**4**	**2**
15.	Discuss about Neural networks with an example.	**4**	**2**
16.	Specify the layers and their responsibilities in Lambda Architecture.	**4**	**2**
17.	List some of the IoT-related technologies in Manufacturing.	**5**	**2**
18.	Discuss about SCADA.	**5**	**2**
19.	Draw the smart city Traffic Architecture.	**5**	**3**
20.	What makes smart cities successful?	**5**	**2**

PART- B (5 x 10 = 50 Marks)

		Marks	CO	RBT LEVEL
21. (a)	Elaborate in detail about IoT World Forum (IoTWF) standardized Architecture in detail.	**(10)**	**1**	**3**
	(OR)			
(b)	Analyze the key types of sensors, actuators, and smart objects utilized in Internet of Things (IoT) applications	**(10)**	**1**	**3**
22.(a)	Demonstrate the need for optimization at various layers? What is a constrained node and specify the classification?	**(10)**	**2**	**3**
	(OR)			
(b)	Elaborate in detail about the Profiles and compliances in IoT Network layer.	**(10)**	**2**	**3**

		Marks	CO	RBT LEVEL
23.(a)	Analyze the building blocks of IoT and its functionalities with suitable illustration.	**(10)**	**3**	**3**
	(OR)			
(b)	Illustrate how Raspberry Pi components and interfaces are used for programming IoT devices.	**(10)**	**3**	**3**
24.(a)	Enumerate in detail about Hadoop cluster in Big Data Analytics.	**(10)**	**4**	**3**
	(OR)			
(b)	Elucidate in detail about the common challenges in OT Security.	**(10)**	**4**	**3**
25.(a)	Implement an IoT strategy for smart city and design the layered architecture for implementing smart cities.	**(10)**	**5**	**3**
	(OR)			
(b)	Implement an Industrial application of IoT system and brief on the various use case of Industrial automation and control systems reference model.	**(10)**	**5**	**3**

PART- C (1 x 10 = 10 Marks)

(Q.No.26 is compulsory)

		Marks	CO	RBT LEVEL
26.	Design a basic Arduino board and explain the procedure for installing and setting up of IDE with a real time example.	**(10)**	**3**	**5**

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