GUJARAT TECHNOLOGICAL UNIVERSITY
BE - SEMESTER–VI(NEW) EXAMINATION – WINTER 2022

Subject Code:3163212   **Date:15-12-2022**
Subject Name:IT Infrastructure and Utilities
Time:02:30 PM TO 05:00 PM   **Total Marks:70**

Instructions:
1. Attempt all questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.
4. Simple and non-programmable scientific calculators are allowed.

			MARKS
Q.1	(a)	Discuss Augmented reality with its applications.	03
	(b)	Briefly discuss basic functions of Real Time Operating Systems (RTOS).	04
	(c)	What do you mean by enabling technologies in IoT? Explain in detail.	07
Q.2	(a)	What is IoT? Which are the components of IoT based applications?	03
	(b)	Which are the different types of pressure sensor. Brief about any two types of pressure sensor in detail.	04
	(c)	Explain classification of communication protocols with suitable example. Also write difference between IPv4 & IPv6.	07
		OR	
	(c)	What is MQTT? Explain its components with suitable example.	07
Q.3	(a)	Explain Green Data Center in brief.	03
	(b)	What is Tier-1, Tier-2, and Tier 3 types of data center?	04
	(c)	Discuss Cisco Virtualized Multi-Tenant Data Center in detail.	07
		OR	
Q.3	(a)	Differentiate between augmented reality and virtual reality.	03
	(b)	Explain different scheduling algorithms of real time operating systems.	04
	(c)	Explain Smart grid infrastructure in detail.	07
Q.4	(a)	Write about classification of sensors and factors to be considered while selecting any sensor for particular application.	03
	(b)	Which are the characteristics of IoT based application? Explain any two in detail.	04
	(c)	What are different storage network technologies, discuss in detail: DAS, NAS, and SAN.	07
		OR	
Q.4	(a)	Draw IoT protocol stack with different layers.	03
	(b)	Write about AR applications in navigation.	04
	(c)	Explain various layers of IoT protocol stack by giving suitable example of each layer.	07
Q.5	(a)	What are the design issues of real time operating systems?	03
	(b)	Explain various input and output devices available for virtual reality.	04
	(c)	Discuss case study on IoT in Indian Scenario: Aadhaar	07
		OR	
Q.5	(a)	Write about role of artificial intelligence in IoT based applications.	03
	(b)	Write about computer applications in Smart Security Surveillance.	04
	(c)	What are the challenges in IoT? Explain each of them in detail.	07

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