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III/IV B.Tech (Regular) DEGREE EXAMINATION

July/August, 2023

Electronics & Communication Engineering

Sixth Semester

Internet of Things

Time: Three Hours

Maximum: 70 Marks

Answer question 1 compulsory.

(14X1 = 14Marks)

Answer one question from each unit.

(4X14=56 Marks)

		CO	BL	M
1	a) Describe the IoT stack	CO1	L1	1M
	b) Discuss the growth of IoT its increasing adoption, and impact	CO1	L2	1M
	c) How does pH sensor measure the acidity or alkalinity of a solution?	CO2	L1	1M
	d) What is a gyro sensor, and write about the advantages with respect to IOT system	CO2	L1	1M
	e) What is sensor interfacing?	CO2	L1	1M
	f) List the Operating Systems available for Raspberry Pi	CO3	L1	1M
	g) How does data privacy play a role in IoT deployments?	CO4	L2	1M
	h) How does cloud storage benefit IoT applications?	CO4	L2	1M
	i) Expand NMEA.	CO4	L2	1M
	j) What are the gases detected by using MQ02 sensor.	CO4	L1	1M
	k) What is the architecture of the Arduino platform?	CO3	L1	1M
	l) What are some compatible peripherals that can be used with Raspberry Pi?	CO3	L2	1M
	m) What are Security aspects we need to check with the Cloud service provider	CO4	L1	1M
	n) Compare Fog and Cloud?	CO4	L1	1M
Unit-I				
2	a) What is the Internet of Things (IoT), and how has it grown in recent years? Can you provide a statistical view of the growth and adoption of IoT globally?	CO1	L1	7M
	b) What are the enabling techniques or technologies that support the implementation of IoT systems? Explain various levels in IOT architecture.	CO1	L2	7M
(OR)				
3	a) Explain the various application areas where IoT is being used, such as smart cities, healthcare, agriculture, industrial automation, and transportation?	CO1	L1	7M
	b) Explain the scalability and interoperability challenges in IoT ecosystems, particularly when dealing with a large number of connected devices and different communication protocols? How are data management and analytics affected by the volume, velocity, and variety of data generated by IoT devices?	CO1	L2	7M
Unit-II				
4	a) Explain the different types of sensors used in IoT systems? What are their respective functions and applications?	CO2	L1	7M
	b) What is an LDR (Light Dependent Resistor) sensor, and how does it detect changes in light intensity? Explain its operating principle and variations?	CO2	L1	7M
(OR)				
5	a) What are the potential applications of heartbeat sensors in IoT systems, such as fitness monitoring, healthcare devices, or stress detection?	CO2	L2	7M
	b) How can a gas sensor be interfaced with NodeMCU or Arduino boards? What are the required connections, pin configurations, and coding techniques?	CO2	L3	7M
Unit-III				
6	a) What is the architecture of Arduino boards? Explain the components and their functionalities.	CO3	L2	7M
	b) What is the story behind Raspberry Pi? What peripherals, add-ons, and accessories are compatible with Raspberry Pi?	CO3	L1	7M
(OR)				
7	a) What is the Arduino Playground, and what resources does it offer for Arduino enthusiasts? Explain its purpose and the types of content available?	CO3	L1	7M
	b) Provide guidelines for configuring the network settings on Raspberry Pi, configuring GPIO pins?	CO3	L2	7M
Unit-IV				
8	a) What factors should be considered when selecting a cloud service provider for IoT applications? What are the best practices or considerations for evaluating and choosing the right cloud service provider based on specific IoT application requirements?	CO4	L2	7M
	b) What is fog computing, and how does it differ from cloud computing in the context of IoT? Explain the concept of bringing computational resources closer to the edge of the network?	CO4	L3	7M
(OR)				
9	a) Write about the concept of IOT cloud with few examples. Also compare public and private cloud.	CO4	L3	7M
	b) What are the applications and advantages of using IoT and cloud computing in smart parking systems? Describe a case study showcasing the implementation of smart parking solutions and the benefits derived from them.	CO4	L2	7M



SCHEME OF EVALUATION

- CLASS- III/IV B.Tech (Regular) Sixth Semester
- DEPARTMENT-Electronics & Communication Engineering
- SUBJECT-Internet of Things[20EC604]

Verified By:

INTERNAL EXAMINER

EXTERNAL EXAMINER

HOD-ECE