Reg No.:_____ Name:_____

APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY

B.Tech Degree S8 (R,S) / S8 (PT) (R) Examination May 2024 (2019 Scheme)

Course Code: CST448

Course Name: INTERNET OF THINGS

Max. Marks: 100 **Duration: 3 Hours**

PART A

Answer all questions, each carries 3 marks. Marks

1		Describe IoT and Digitization.	(3)
2		Describe the functions of various layers of simplified IoT architecture model.	(3)
3		Illustrate how sensors and actuators interact with the physical world.	(3)
4		Describe SANET.	(3)
5		Explain the parameters need to be considered while choosing between IP adaptation/adoption for last mile communication.	(3)
6		Differentiate between CoAP and MQTT.	(3)
7		Discuss structured data and unstructured data.	(3)
8		Differentiate between supervised learning and unsupervised learning.	(3)
9		List and explain Raspberry Pi interfaces for data transfer.	(3)
10		Write a python program for controlling an LED with switch.	(3)

PART B

Answer any one full question from each module, each carries 14 marks.

Module I

11	a)	Differentiate between OT and IT technology.	(6)
	b)	Describe the standardized IoT architectures	(8)

OR

12	a)	With a neat diagram explain the IoT data management and compute stack with fog computing.	(5)
	b)	Illustrate the impact of IoT in at least 2 domains of everyday lives of human life.	(9)

Module II

13	a)	Define Sensors. Describe various types of sensors.	(6)
	b)	Explain the IEEE 802.15.4 standard for wireless communication.	(8)

OR

14	a)	Define Smart Objects. Describe the characteristics of a smart object.	(5)
	b)	Describe any three communication criteria which are to be considered when selecting and dealing with connecting smart objects.	(9)

Module III

15	a)	Describe the advantages of the IP suite for the internet of things.	(6)
	b)	Explain tunnelling legacy SCADA over IP networks	(8)

OR

16	a)	Explain the different schedule management and packet forwarding models of 6TiSCH.	(7)
	b)	Explain RPL encryption and authentication on constrained nodes	(7)

Module IV

17	a)	Describe edge analytics core functions.	(7)
	b)	Explain the Flexible NetFlow architecture.	(7)

OR

18	a)	Explain the Hadoop eco system with a neat diagram.	(7)
	b)	Describe the logical framework based on the Purdue model for control hierarchy.	(7)

Module V

19	a)	Explain the django architecture.	(6)
	b)	Demonstrate an example of Raspberry Pi applications for industrial IoT.	(8)

OR

20	a)	List and explain the various components/peripherals of Raspberry pi board	(6)
	b)	Explain the working of WAMP protocol.	(8)

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