Reg No.:_____ Name:_____

APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY

B.Tech Degree S8 (S) / S8 (PT) (S) Examination August 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		List the most significant challenges in IoT and briefly explain about any two.	(3)
2		Write a short note about the sub layers of communication network layer in a Simplified IoT Architecture.	(3)
3		Explain the four defining characteristics of a smart object.	(3)
4		Comment on various types of Sensors.	(3)
5		With necessary sketches, write a short note on 6LoWPAN header stacks and header compression.	(3)
6		Differentiate between MQTT and CoAP.	(3)
7		Describe about the four major domains of application of machine learning for IoT.	(3)
8		Differentiate between big data and edge analytics.	(3)
9		Describe SkyNet IoT Messaging Platform	(3)
10		Write a python program for switching LED on/off from Raspberry Pi console.	(3)

PART B

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

Module I

11	a)	Outline the functionalities of all the layers (in the core IoT functional stack) for an IoT network to be operational.	(14)

OR

12	a)	Detail about the IoT Reference Model Published by the IoT World Forum.	(8)
	b)	Explain the role of IoT in Connected Factories and Smart Connected Buildings.	(6)

Module II

13	a)	Define the characteristics and attributes considered when selecting and dealing with connecting smart objects.	(14)

OR

14	a)	Differentiate between the IEEE 802.15.4 and IEEE 802.11ah standards.	(7)
	b)	Define the term Narrow Band IoT.	(7)

Module III

15	a)	Illustrate the Constrained Application Protocol (CoAP) message format and explain about message fields.	(6)
	b)	Describe about the schedule management mechanism and packet forwarding models in 6TiSCH.	(8)

OR

16	a)	Write a detailed description on Message Queuing Telemetry Transport (MQTT).	(10)
	b)	Comment on fragmentation and mesh addressing in 6LoWPAN.	(4)

Module IV

17	a)	Illustrate common challenges in OT Security.	(14)

OR

18	a)	Explain the Flexible NetFlow Architecture.	(8)
	b)	Explain the Two important categorizations from an IoT perspective.	(6)

Module V

19	a)	Describe how AWS supports IoT development.	(7)
	b)	Explain the Django Architecture.	(7)

OR

20	a)	Demonstrate an example of Raspberry Pi applications for Industrial IoT.	(7)
	b)	Explain the development of a RESTful web API.	(7)

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