2025
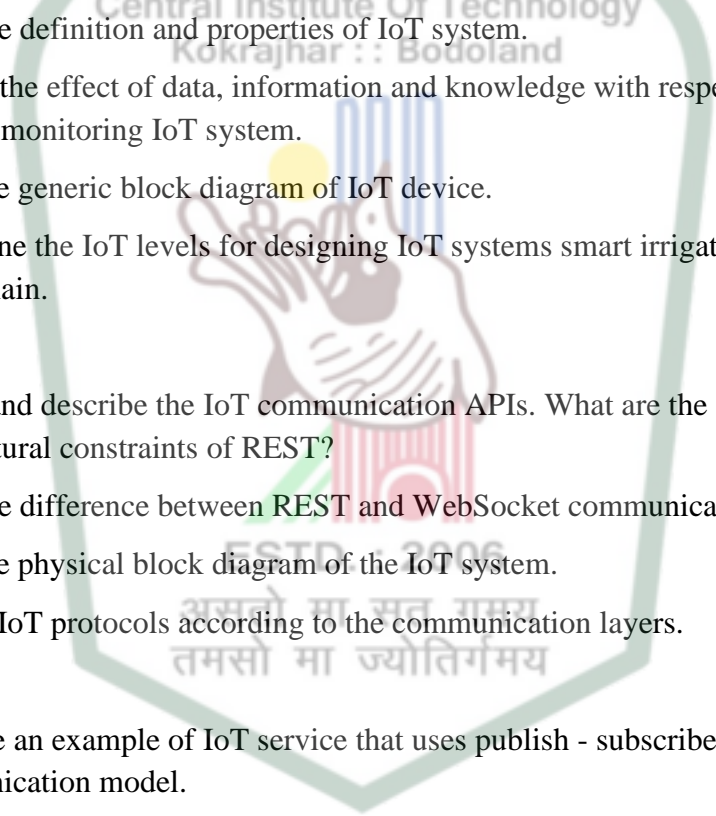
INTERNET OF THINGS

Full Marks : 100

Time : Three hours

The figures in the margin indicate full marks for the questions.

*Answer **any five** questions.*

1.	a)	Write the definition and properties of IoT system.	5
	b)	Discuss the effect of data, information and knowledge with respect to weather monitoring IoT system.	5
	c)	Draw the generic block diagram of IoT device.	5
	d)	Determine the IoT levels for designing IoT systems smart irrigation system and explain.	5
2.	a)	Define and describe the IoT communication APIs. What are the architectural constraints of REST?	5
	b)	Write the difference between REST and WebSocket communication model.	5
	c)	Draw the physical block diagram of the IoT system.	5
	d)	List the IoT protocols according to the communication layers.	5
3.	a)	Describe an example of IoT service that uses publish - subscribe communication model.	4
	b)	Write a detail list of applications areas of IoT system.	6
	c)	Write the 10 steps on IoT design methodology.	5
	d)	Briefly discuss the Software Defined Networking (SDN) architecture and layers.	5
4.	a)	What is an IoT device? Describe IoT device with the help of basic building blocks.	2+5
	b)	Describe how Raspberry pi or arduino uno can be used as an IoT device?	8

c) Determine the IoT levels for designing home automation IoT systems including smart lighting and intrusion detection.   5

5. a) What is the difference between python module and package? Give examples.   5

    b) Create a module to track academic performance of a class.

    c) Print Fibonacci sequence using a 'while' loop.

    d) Find prime numbers from 3 to 100 using the 'for' loop.

6. Write short notes on any four of the following   4*5

    a) Cloud storage models

    b) IoT vs M2M

    c) IoT enabling technologies.

    d) IoT level 4 deployment templates

    e) Role of a controller service in an IoT system

7. a) Discuss about functional view specification of IoT with an example.   10

    b) Describe how NFV can be used for virtualizing IoT devices?   10

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