GANDHI INSTITUTE OF ENGINEERING AND TECHNOLOGY UNIVERSITY, ODISHA, GUNUPUR

(GIET UNIVERSITY)

B. Tech (Fifth Semester - Regular) Examinations, November – 2025

23BELOE35013/23BEEPE35013 – Internet Of Things

(EE & EEE)

Time: 3 hrs Maximum: 60 Marks

Answer ALL questions

(The figures in the right hand margin indicate marks)

PART – A **(2 x 5 = 10 Marks)**

Q.1. Answer ***ALL*** questions		CO #	Blooms Level
a.	Define the Internet of Things (IoT).	CO1	K1
b.	How does NETCONF differ from traditional SNMP in managing IoT devices?	CO2	K2
c.	Apply a for loop in Python to print the elements of a list called values.	CO3	K3
d.	Compare the roles of input (sensors) and output (actuators) interfacing in an IoT device.	CO4	K4
e.	Propose one improvement to enhance security in large-scale IoT deployments such as smart cities.	CO5	K5

PART – B **(10 x 5 = 50 Marks)**

Answer ***ALL*** the questions		Marks	CO #	Blooms Level
2. a.	Identify and briefly describe any five IoT application domains such as home automation, smart cities, agriculture, or healthcare.	5	CO1	K1
b.	Describe IoT enabling technologies and explain how they support IoT development.	5	CO1	K2
	(OR)			
c.	Apply IoT concepts to explain how energy management can be achieved using sensors, cloud systems, and automation.	5	CO1	K3
d.	Examine the differences between IoT applications in logistics and agriculture based on data collection, devices used, and communication models.	5	CO1	K4
3.a.	What is SDN? Describe any two basic components of an SDN architecture.	5	CO2	K1
b.	Describe the limitations of SNMP and explain why traditional SNMP is not sufficient for modern IoT system management.	5	CO2	K2
	(OR)			
c.	Apply the concepts of NETCONF-YANG to explain how device configuration can be managed in a large-scale IoT deployment.	5	CO2	K3
d.	Assess the role of SDN and NFV together in improving IoT network performance, reliability, and automation.	5	CO2	K5
4.a.	Define modules and packages in Python and give two examples of each.	5	CO3	K1
b.	Describe how file handling works in Python and explain different file modes.	5	CO3	K2
	(OR)			
c.	Apply the concept of functions and scope to write a Python program demonstrating local and global variables.	5	CO3	K3
d.	Compare lists, tuples, and dictionaries in Python and analyze their suitability for storing IoT sensor data.	5	CO3	K4
5.a.	Describe the GPIO pins of Raspberry Pi and classify them based on their	5	CO4	K1

	functions.			
b.	Discuss the purpose of Raspbian OS and explain why Linux is widely used in IoT devices.	5	CO4	K2
	(OR)			
c.	Apply the concept of GPIO programming to control an LED or buzzer using Python on Raspberry Pi.	5	CO4	K3
d.	Compare sensor input interfacing and actuator output interfacing in Raspberry Pi, highlighting challenges in each case.	5	CO4	K4
6.a.	Describe data aggregation in smart cities and list the major sources of data.	5	CO5	K1
b.	Discuss the privacy challenges faced in IoT environments and explain why privacy is critical.	5	CO5	K2
	(OR)			
c.	Demonstrate how IoT security mechanisms can be implemented to protect data from cyberattacks in smart city applications.	5	CO5	K3
d.	Examine the real-world deployment challenges in IoT systems and explain how they affect large-scale implementations like smart cities.	5	CO5	K4

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