QP Code: RA22BTECH434 | Reg. No | | | | | | | | | | | AR 21/22

Gandhi Institute of Engineering and Technology University, Odisha, Gunupur
(GIET University)

B. Tech (Sixth Semester – Regular/Supplementary) Examinations, April 2025

21BECPE36021 – Internet of Things

(ECE)

Time: 3 hrs | Maximum: 70 Marks

Answer ALL questions

(The figures in the right hand margin indicate marks)

PART – A **(2 x 5 = 10 Marks)**

		CO #	Blooms Level
Q.1.	Answer ***ALL*** questions		
a.	Explain the key advantages of IoT.	CO2	K1
b.	Explain how YANG is utilized by NETCONF in IoT system management.	CO4	K2
c.	Discuss the necessity of data analysis in IoT design.	CO2	K2
d.	List any two advantages of using Raspberry Pi.	CO3	K1
e.	List any two key advantages of using fog computing in IoT-based applications.	CO1	K1

PART – B **(15 x 4 = 60 Marks)**

		Marks	CO #	Blooms Level
	Answer ***all*** the questions			
2. a.	Demonstrate how websocket-based communication is implemented in IoT services	8	CO1	K3
b.	Explain the process of communication using REST-based apis in IoT systems	7	CO1	K2
	(OR)			
c.	Design the IoT levels for home automation, including smart lighting and intrusion detection systems.	8	CO1	K6
d.	Illustrate an example of an IoT system where information and knowledge are inferred from data.	7	CO1	K3
3.a.	Analyze the IoT system management using NETCONF-YANG framework.	8	CO2	K4
b.	Evaluate the limitations that make SNMP unsuitable for IoT systems	7	CO2	K5
	(OR)			
c.	Examine the differences in data collection and analysis approaches between M2M and IoT.	8	CO2	K4
d.	Describe the role of a NETCONF server and demonstrate its implementation using Netopeer.	7	CO2	K3
4.a.	Differentiate between a physical entity and a virtual entity in IoT.	8	CO3	K4
b.	Classify the various service types used in IoT systems	7	CO3	K4
	(OR)			
c.	Develop a Python program to control an LED using a switch on Raspberry Pi.	8	CO3	K6
d.	Identify the various memory interfaces used in IoT devices and explain their significance	7	CO3	K2
5.a.	Illustrate with an example how fog computing supports smart city applications.	8	CO4	K3
b.	Compare cloud computing and fog computing with respect to latency, bandwidth, and data processing.	7	CO4	K4
	(OR)			
c.	Assess the impact of fog computing on reducing cloud data center load and improving system scalability	8	CO4	K5
d.	Demonstrate the integration of fog computing with edge devices for effective IoT data handling.	7	CO4	K3

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