PVP 23

Code: 23EC4501C

III B.Tech - I Semester - Regular Examinations - NOVEMBER 2025

INTERNET OF THINGS
(ELECTRONICS & COMMUNICATION ENGINEERING)

Duration: 3 hours Max. Marks: 70

Note: 1. This question paper contains two Parts A and B.
2. Part-A contains 10 short answer questions. Each Question carries 2 Marks.
3. Part-B contains 5 essay questions with an internal choice from each unit. Each Question carries 10 marks.
4. All parts of Question paper must be answered in one place.

BL – Blooms Level CO – Course Outcome

PART – A

		BL	CO
1.a)	Give examples of the Impact of Internet of Things (IoT) on our lives.	L2	CO1
1.b)	What is IoT? What are the characteristics of IoT system?	L1	CO1
1.c)	What is sensor? Specify the key characteristics of sensor.	L1	CO1
1.d)	Write down different types of actuators used in IoT applications.	L2	CO1
1.e)	Define a System-on-Chip (SoC) with one example.	L1	CO1
1.f)	Discuss the working function of microcontroller unit.	L2	CO1
1.g)	What is the role of IP in Internet communication?	L1	CO1
1.h)	Differentiate static and dynamic IP address assignment.	L2	CO1
1.i)	Explain Mashing Up API.	L2	CO1

1.j)	Name two protocols commonly used for real-time IoT reaction.	L2	CO1

PART – B

			BL	CO	Max. Marks
UNIT-I					
2	a)	What is IoT? Explain genesis of IoT with a neat diagram.	L2	CO1	5 M
	b)	Compare IT and IoT networks.	L2	CO1	5 M
OR					
3	a)	In what way IoT technology is revolutionizing the connected roadway systems and smart building infrastructure?	L3	CO2	5 M
	b)	What are the IoT challenges and their impact by considering one real time example.	L3	CO2	5 M
UNIT-II					
4	a)	Explain the role of sensor and actuator in an IoT environment with the help of an example.	L2	CO1	5 M
	b)	Explain in detail the IEEE 802.15.4 wireless access technology.	L2	CO1	5 M
OR					
5	a)	Evaluate how scalability and fault tolerance influence the effectiveness of sensor networks. Suggest ways to address these common limitations.	L3	CO2	5 M

	b)	Define smart object and explain the characteristics, Also provide the definition for SANET? Explain the advantages and disadvantages of it.	L2	CO1	5 M
UNIT-III					
6	a)	Write down why the use of System-on-Chip (SoC) is having a positive impact on the wireless system. Choose the functions of Microcontroller Unit (MCU) and System on Chip (SoC) in Embedded Computing in detail.	L3	CO3	5 M
	b)	Develop an Arduino program for blinking LED.	L3	CO3	5 M
OR					
7	a)	Describe Arduino UNO development board with different specifications and the steps to connect the Arduino.	L2	CO1	5 M
	b)	Construct notes on Hardware and Openness of Arduino.	L3	CO3	5 M
UNIT-IV					
8	a)	What are the fundamental difference between TCP and UDP? Explain with suitable example which is preferable for an application.	L4	CO4	5 M
	b)	What is MAC address? Compare MAC and IP addresses.	L2	CO1	5 M
OR					

9	a)	Demonstrate the purpose of DNS.	L3	CO4	5 M
	b)	Explain the working of the HTTP protocol in IoT communication.	L2	CO1	5 M
UNIT-V					
10	a)	Explain the step-by-step process of creating a prototype API service. Illustrate with an example.	L3	CO5	5 M
	b)	Analyze the design principles of writing a new API.	L4	CO5	5 M
OR					
11	a)	How to write new API? Illustrate with an example.	L3	CO5	5 M
	b)	Analyze the importance of real-time reactions in IoT applications.	L4	CO5	5 M