R22 Regulation *Subject code:4P5HE*

TKR COLLEGE OF ENGINEERING AND TECHNOLOGY

(Autonomous, Accredited by NAAC with 'A+' Grade)

B.Tech V Semester Supplementary Examinations, April 2026

INTERNET OF THINGS

(CSE(DS))

Maximum Marks: 60 Date:27.04.2026 Duration: 3 hours

Note: **1.This question paper contains two parts A and B.**
2. Part A is compulsory which carries 10 marks. Answer all questions in Part A.
3. Part B consists of 5 Units. Answer any one full question from each unit.
4. Each question carries 10 marks and may have a, b, c, d as sub questions.

Part-A

All the following questions carry equal marks (10X1M=10 Marks)		Marks	CO	BTL
1.a)	Define Wireless Sensor Network.	1M	1	L1
b)	What is the role of things in IoT?	1M	1	L1
c)	What is M2M communication?	1M	2	L1
d)	Write the limitations of SNMP protocol.	1M	2	L1
e)	Define multi homing in the context of IoT	1M	3	L1
f)	What are the challenges of movable sensor node.	1M	3	L1
g)	What is the use of the Arduino IDE?	1M	4	L1
h)	Compare microcontroller and Microprocessor.	1M	4	L2
i)	Define Cloud Computing	1M	5	L1
j)	What is meant by scalability	1M	5	L1

Part-B

Answer All the following questions. (5X10M=50Marks)		Marks	CO	BTL
2	a) Describe the characteristics and physical design of IoT. b) List and explain the different types of Sensors used in IoT Network?	5M 5M	1 1	L3 L2
	OR			
3	a) Elaborate the role of IoT in pollution control systems. b) Identify the challenges of an Internet of Things (IoT)?	5M 5M	1 1	L2 L3
4	a) Illustrate the differences between IoT and M2M. b) How Does Simple Network Management Protocol (SNMP) Work? Explain.	5M 5M	2 2	L2 L2
	OR			
5	a) List and explain the key elements of SDN architecture. b) Write down steps for IoT device Management with NETCONF-YANG.	5M 5M	2 2	L2 L2
6	a) Explain in detail about the IEEE 802.15.4 standard. b) Describe the typical architecture of a wireless sensor node	5M 5M	3 3	L2 L3

	OR			
7	a) Discuss the different network topologies supported by ZigBee. b) Explain the various modes of detection employed in wireless sensor networks (WSN).	5M 5M	3 3	L6 L5
8	a) What are interrupts in Arduino? Write their types and working with examples. b) Elaborate the GPIO pin configuration of Raspberry Pi	5M 5M	4 4	L5 L6
	OR			
9	a) What is a Raspberry Pi? Discuss its features and applications in various domains. b) Explain how random numbers are generated in Arduino. Give suitable examples.	5M 5M	4 4	L6 L2
10	Describe in detail the working and components of Amazon Web Services (AWS) for IoT.	10M	5	L3
	OR			
11	Discuss the importance of Cloud Computing in IoT and how it enhances IoT applications.	10M	5	L6