



VIT

Vellore Institute of Technology
(Deemed to be University under section 3 of UGC Act, 1956)

REG.NO.: 23BC10001

SLOT: C2+TC2

424-35

SCHOOL OF COMPUTER SCIENCE AND ENGINEERING
CONTINUOUS ASSESSMENT TEST - I
WINTER SEMESTER 2025-2026

Programme Name & Branch : B.Tech. Computer Science and Engineering (IoT)
Course Code and Course Name : BCSE310L and IoT Architectures and Protocols
Faculty Name(s) : Dr. BALAJI S./Dr. Venkata Ramana Kasi
Class Number(s) : VL2025260503470/VL2025260503472
Date of Examination : 29-01-2026 (Thursday) Time: 2.00 PM to 3.30 PM
Exam Duration : 90 minutes **Maximum Marks: 50**

General instruction(s): Answer All Questions

- CO – Course Outcome; BL – Blooms Taxonomy Level (1 – Remember, 2 – Understand, 3 – Apply, 4 – Analyze, 5 – Evaluate, 6 – Create)
- Course Outcomes:
 - Identify the hardware and software components, challenges of Internet of Things.
 - Assess different Internet of Things technologies and their applications.

Q. No	Question	Module	Marks	CO	BL
1.	Describe the physical design of IoT in smart parking environment. Justify the design with respect to important characteristic of IoT.	1	10	1	1
2.	A smart campus uses motion sensors, light sensors, and smart meters to monitor energy usage in buildings. The sensed data is sent to a local IoT gateway and processed on a campus server. Based on this local analysis, control commands are generated to automatically switch lights and air conditioners ON or OFF. Administrators monitor the system through a local web and mobile interface connected to the campus server. (a) Identify and explain the major functional blocks involved in the logical design of the above IoT system.	1	5	1	4
	(b) Describe the complete data flow from sensing to actuation in this system along with justification for two suitable communication models for the system	1	5		
3.	Explain the operational states and network configurations of Bluetooth/ Also discuss the layer architecture of Bluetooth classic and Bluetooth smart with its functionalities and frame format.	2	10	1	2
4.	(a) Illustrate the features of CoAP and discuss different messaging types with suitable examples	2	5	2	2
	(b) Discuss IPv6 routing protocol for low power and noise networks.	2	5		
5.	Differentiate between SCADA and Wireless Sensor Networks by analysing its communication models, scalability, human involvement, complexity with suitable real-world applications.	3	10	2	3