06-06-2026 BE IT SEM-VII C SCHEME IOE QP CODE: 20011826

(3 Hours) **[Total Marks: 80]**

N.B. 1) Question No. 1 is compulsory
2) Attempt any three from the remaining Questions No. 2 to No. 6.
3) Illustrate answers with diagrams wherever necessary.

Q 1.		**Solve any four**	
	a)	Differentiate briefly Physical design of IoT & logical design of IoT.	**05**
	b)	What is Fog Computing? State its advantages.	**05**
	c)	What is Internet of Behavior (IoB)?	**05**
	d)	Design a BLE-based IoT system for a smart healthcare application and explain how BLE is used in it.	**05**
	e)	Apply ZigBee technology to design a smart home automation system and explain its working.	**05**
Q 2.	a)	Analyze emerging IoT trends and evaluate their impact on modern technology and industry.	**10**
	b)	Explain the functional blocks of IoT architecture in detail with diagram.	**10**
Q 3.	a)	Explain RFID and NFC technologies in detail with working and applications.	**10**
	b)	Demonstrate how WebSocket protocol can be used to implement a real-time IoT monitoring system.	**10**
Q 4.	a)	Illustrate the use of MQTT protocol in a smart city application with appropriate message flow.	**10**
	b)	Describe the hierarchy of Edge, Fog and Cloud computing in IoT.	**10**
Q 5.	a)	Describe the role of NoSQL in IoT Data Analytics Challenges.	**10**
	b)	Analyze LoRaWAN architecture and evaluate its suitability for large-scale IoT deployments.	**10**
Q 6.		**Solve any two**	**20**
	a)	Apply CoAP protocol to design a constrained IoT device communication system.	
	b)	Illustrate the components of IEEE architecture with advantages.	
	c)	Discuss IoT application in agriculture (Smart Irrigation) with working principles.	

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