ERODE SENGUNTHAR ENGINEERING COLLEGE

(An Autonomous Institution, Affiliated to Anna University)

Thudupathi, Perundurai, Erode - 638057

III YEAR B.TECH INFORMATION TECHNOLOGY

CONTINUOUS ASSESSMENT TEST 1 - SET 2

Credit : 3 | Maximum Marks : 50

Course Code : 19IT602 | Date : 21.02.2025

Course Name : WIRELESS SENSOR NETWORKS | Duration : 1h 30m

Q.No	Part A (8 x 1 = 8 Marks)				Bloom's Level	COs
1	What is the purpose of radio transceiver in WSN?				RE	CO1
	a) a)to receive the data	b) b) to transit the data	c) c) Both transmit and receive the data	d) d) to transmit the Power		
2	The cost of a sensor depends on _____ factors.				UN	CO1
	a) a) Area	b) b) Size	c) c) Complexity of design	d) d) Limited hardware		
3	A sensor network in WSN can be of _____ topology.				RE	CO1
	a) a) Star	b) b) Multi-hop wireless mesh	c) c) Advanced multi-hop wireless mesh	d) d) Mesh		
4	WMN in network topology stands for _____.				RE	CO1
	a) a) Wireless mesh network	b) b) Wired mesh network	c) c) Wired mesh node	d) d) Wireless mesh node		
5	A_____ sensing system is inherently more robust against individual sensor node or link failures, because of redundancy in the network				RE	CO2
	a) a) Centralized	b) b) Decentralized	c) c) Ad-Hoc	d) d) Multi Hope		
6	QoS in WSN stands for _____.				RE	CO2
	a) a) Quality of service	b) b) Quantity of service	c) c) Quantity of software	d) d) Quality of software		
7	USB follows _____ type of communication				UN	CO2
	a) a) Serial	b) b) Parallel	c) c) Concurrent	d) d) WAN		
8	A low-power wireless device is called _____.				RE	CO2
	a) a) LPWAN	b) b) WAN	c) c) LAAN	d) d) PAN		
Q.No	**Part B (7 x 2 = 14 Marks)**				**Bloom's Level**	**COs**
9	Define WSN.				RE	CO1
10	Write the evaluation of WSN Technology.				UN	CO1

11	Give the Standards for Bluetooth and WiFi.		RE	CO1
12	List the Hardware Components of WSN		UN	CO2
13	Mention the Single node Architecture with diagram.		RE	CO2
14	State the advantages and applications of WSN.		UN	CO2
15	Categorize the applications of sensor Networks.		UN	CO2
Q.No	**Part C (2 x 14 = 28 Marks)**	**Marks**	**Bloom's Level**	**COs**
16	a) Illustrate the background of Wireless Sensor Network (WSN) technology, tracing its evolution, key components, and the driving factors behind its development. Discuss the foundational concepts of WSNs, including sensor nodes, communication protocols, and the critical role of wireless communication. Additionally, highlight the early use cases and applications that have shaped the growth of WSNs, providing examples and potential future trends.	14	AN	CO1
	or			
	b) Explain the different sensor network standards in detail, discussing their features, communication protocols, and roles in facilitating interoperability, scalability, and reliability in wireless sensor networks. Specifically, provide an in-depth analysis of the IEEE 802.15.4, Zigbee, and 6LoWPAN standards, including their architecture, protocol stack, and applications. Illustrate the concepts with relevant diagrams.	14	AN	CO1
17	a) i) Write the differences between mobile Ad-Hoc networks and sensor networks. Provide examples to illustrate the key differences in terms of their structure, communication, and use cases.	7	RE	CO1
	a) ii) Describe the RF (Radio Frequency) technologies used in Wireless Sensor Networks (WSNs). Discuss their role in communication, different RF standards, and their advantages for enabling wireless data transmission in sensor networks.	7	AN	CO2
	or			
	b) i) Describe the key challenges faced by Wireless Sensor Networks (WSNs), including issues related to energy consumption, scalability, network topology, security, and data transmission. Discuss how these challenges impact the performance and reliability of WSNs, and mention potential solutions or strategies to address them.	7	AN	CO1
	b) ii) Explain the architecture of a Wireless Sensor Network (WSN). Discuss the different layers in the architecture, including the sensing layer, network layer, and application layer, and describe the role of each layer in the operation and communication of the network.	7	UN	CO2

Course Outcomes		Marks
CO1	To examine the various wireless sensor networking strategies.	52
CO2	To evaluate the different types of architecture used in sensor networks.	26

Blooms Level	UN	RE	AN	AP	EV	CR	Total
Marks	17	19	42	0	0	0	**78**

Prepared By	Scrutinized By	Verified By
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