

THE KAVERY ENGINEERING COLLEGE
(An Autonomous Institution)

B.E/B.TECH DEGREE END SEMESTER THEORY EXAMINATIONS, NOV /DEC 2024

Fifth Semester

Electronics and Communication Engineering

CEC365 – Wireless Sensor Network Design

Regulations - 2021

Duration : 3 Hrs

Maximum: 100 Marks

PART – A (ANSWER ALL QUESTIONS) (Marks 10*2=20)

<i>Q.No</i>	<i>Questions</i>	<i>BLT</i>	<i>CO</i>	<i>Marks</i>
1.	Compare the wireless sensor network with Ad-hoc.	AN	1	2
2.	Define clustered architecture.	RE	1	2
3.	Analyze the pros and cons of Scheduled based protocols.	AN	2	2
4.	Classify the parameters required for evaluating MAC protocols.	AN	2	2
5.	What are the security consideration in 6LoWPAN network?	RE	3	2
6.	List the type of mobilities.	RE	3	2
7.	What is publish/subscribe?	RE	4	2
8.	What is SIP? Where does it lie on OSI layer?	RE	4	2
9.	Name the features of Node-Level software platforms.	RE	5	2
10.	Illustrate how Contiki handle inter-process communication.	UN	5	2

PART – B (ANSWER ALL QUESTIONS) (Marks 5*13 = 65)

<i>Q.No</i>	<i>Questions</i>	<i>BLT</i>	<i>CO</i>	<i>Marks</i>
11.	a Explain the key challenges in the design and deployment of Wireless Sensor Network. Discuss considering the factors like energy efficiency and reliability impact WSNs.	EV	1	13
	Or			
	b Briefly specify IEEE 802.15.4 MAC protocol and explain whether the MAC protocols of 802.11 & Bluetooth be used for WSN. Justify.	EV	1	13
12.	a Find the impact of S-MAC protocol in a network with suitable diagrams. List the differences between MAC protocols for wired networks and wireless networks.	RE	2	13
	Or			
	b How does Low Energy Adaptive Clustering Hierarchy protocol differs from other routing protocol, explain its routing with the help of neat diagram. Give its advantages and disadvantages.	RE	2	13
13.	a Develop the association between IPv6 and 6LoWPAN. How does 6LoWPAN extend IPv6 to address the distinctive requirements of low power wireless networks?	AN	3	13
	Or			
	b Contrast the detail about the link layer protocol and adaptive layer.	AN	3	13

14.	a	i	Explain about web service paradigms.	UN	4	7
		ii	Explain ZigBee compact application protocol.	AN	4	6
	Or					
	b		Explain with neat diagram explain the architecture of SNMP.	UN	4	13
15.	a	i	Define sensor node hardware and explain in detail about three categories of sensor node hardware with examples.	RE	5	6
		ii	Write a note on Berkeley motes.	RE	5	7
	Or					
	b	i	What are WSN simulators? Explain with example.	UN	5	6
		ii	What are various challenges faced in sensor network programming.	UN	5	7

*PART – C (Marks 1*15 = 15)*

<i>Q.No</i>	<i>Questions</i>			<i>BLT</i>	<i>CO</i>	<i>Marks</i>
16.	a	i	Interpret the transceiver characteristics and structure used in the sensor node.	UN	1	8
		ii	Outline the importance of the mediation device protocols with relevant diagrams in wireless sensor networks.	UN	2	7
Or						
	b	i	Explain about fragmentation and reassembly. With neat diagram.	UN	3	8
		ii	Interpret the core components and message patterns used in MQTTs.	UN	4	7