

Register No : _____

THE KAVERY ENGINEERING COLLEGE

(An Autonomous Institution)

B.E/B.TECH DEGREE END SEMESTER THEORY EXAMINATIONS, NOV/DEC 2025

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)

Q.No	Questions	BTL	CO	Marks
1.	List the challenges of designing and deploying WSNs.	L1	1	2
2.	Compare the Ad-hoc networks with WSN.	L2	1	2
3.	State the primary power-saving mechanism used by B-MAC.	L1	2	2
4.	What is the purpose of the metadata exchange phase in the SPIN protocol?	L1	2	2
5.	What is fragmentation?	L1	3	2
6.	Which specific IEEE standard is typically used as the Link Layer for 6LoWPAN?	L2	3	2
7.	Define the Publish protocol paradigm.	L1	4	2
8.	Write the primary function of Service Discovery in a dynamic WSN.	L2	4	2
9.	Recall the features of Node-Level Software Platforms	L2	5	2
10.	Relate the application example of TinyOS.	L1	5	2

PART – B (ANSWER ALL QUESTIONS) (Marks 5*16 = 80)

Q.No	Questions	BLT	CO	Marks
11.	a Explain the critical challenges in WSN design and deployment. Evaluate how energy efficiency, scalability and reliability fundamentally constrain WSN development and protocol design across the layers. Or	L2	1	16
	b Describe in detail about: (i) ZIGBEE (ii) BLUETOOTH	L2	1	16
12.	a i Explain the key differences between MAC protocols for wired networks and wireless networks.	L2	2	8
	ii Discuss about the classification of SPIN protocol.	L2	2	8
	Or			
	b i Explain about the key features of LEACH.	L2	2	8
	ii How do protocols like S-MAC and B-MAC optimize energy consumption and data Communication?	L2	2	8

13.	a	Explain in detail about fragmentation and reassembly.	L2	3	16
	Or				
14.	b	Describe about mobile IPV6, MANET and ROLL.	L2	3	16
	Or				
14.	a	Discuss about MQTT-S with neat sketches.	L3	4	16
	Or				
15.	b	Explain about Zigbee compact application protocol (CAP).	L3	4	16
	Or				
15.	a	Discuss about TOSSIM as a simulator for Wireless Sensor Network applications. Analyze the inherent trade-offs and limitations of simulation environments.	L2	5	16
	Or				
15.	b	Explain the architectural design of the Contiki OS communication stack that allows to integrate both Low-Power, Lossy Network and traditional Internet protocols.	L2	5	16
	Or				