Reg. No.												

Question Paper Code	12244

M.E. / M.Tech. - DEGREE EXAMINATIONS, NOV / DEC 2023

Third Semester

M.E. - Embedded Systems Technologies

20PESEL309 - EMBEDDED WIRELESS SENSOR NETWORK

(Regulations 2020)

Duration: 3 Hours Max. Marks: 100

PART - A (10 × 2 = 20 Marks)

Answer ALL Questions

		Marks, K-Level, CO
1.	How does ad hoc network differ from wireless sensor networks?	*2,K1,CO1*
2.	What are the characteristics of Berkeley mote family?	*2,K2,CO1*
3.	Recall figure of merit in WSN.	*2,K1,CO2*
4.	Define dynamic modulation scaling.	*2,K2,CO2*
5.	Mention the advantages of Mediation device protocol.	*2,K1,CO3*
6.	Differentiate between contention based MAC protocol and scheduled based MAC protocol.	*2,K2,CO3*
7.	Write the importance of anti aliasing filters.	*2,K1,CO4*
8.	Define Smart Sensors.	*2,K2,CO4*
9.	What is the role of WSN in Body Area Networking?	*2,K1,CO5*
10.	Write short notes on Wearable Sensors.	*2,K2,CO5*

PART - B (5 × 13 = 65 Marks)

Answer ALL Questions

11.	a)	Describe the types of wireless sensor networks with a neat diagram.	*13,K2,CO1*
		OR	
	b)	Discuss the energy consumption of a node with an appropriate diagram.	*13,K2,CO1*
12.	a)	Explain the transceiver tasks and characteristics in a sensor node in a wireless sensor network.	*13,K2,CO2*
		OR	
	b)	Explain the Protocol stack of WSN in detail.	*13,K2,CO2*
13.	a)	Explain the Physical layer design considerations of WSN.	*13,K2,CO3*
		OR	
	b)	Briefly explain the Low-Energy adaptive clustering hierarchy.	*13,K2,CO3*

K1 – Remember; K2 – Understand; K3 – Apply; K4 – Analyze; K5 – Evaluate; K6 – Create

14. a) Explain briefly about the static characteristics of sensors. *13,K2,CO4*

OR

b) Explain the working principle of Temperature Sensors and mention its advantages and disadvantages. *13,K2,CO4*

15. a) Evaluate the importance, performance and applications of various sensors in Home automation. *13,K2,CO5*

OR

b) With one practical example explain the uses of sensors in habitat monitoring. *13,K2,CO5*

PART - C (1 × 15 = 15 Marks)

16. a) Demonstrate how to Embed Cryptographic algorithms on ARM7TDMI microcontroller using embedded C language. *15,K2,CO6*

OR

b) Explain the importance of event dispatchers and event handlers in FPGA based customizable event driven architecture. *15,K2,CO6*