Code: P18ECO11

HALL TICKET NUMBER

PACE INSTITUTE OF TECHNOLOGY & SCIENCES::ONGOLE
(AUTONOMOUS)
IV B.TECH I SEMESTER END SUPPLEMENTARY EXAMINATIONS, MARCH-2023
INTRODUCTION TO WIRELESS SENSOR NETWORKS
(IT Branch)

Time: 3 hours   Max. Marks: 60

Note: Question Paper consists of Two parts (Part-A and Part-B)

PART-A

Answer **all** the questions in Part-A (**5X2=10M**)

Q.No.		Questions	Marks	CO	KL
1.	a)	What are the advantages of sensor networks,	[2M]	1	1
	b)	Point out the challenges for WSNs.	[2M]	2	1
	c)	Define node and draw PANs topology.	[2M]	3	1
	d)	How does an Ad hoc network differ from wireless networks? Define.	[2M]	4	1
	e)	Write the Smart metering applications	[2M]	5	1

PART-B

Answer One Question from each UNIT (5X10=50M)

Q.No.		Questions	Marks	CO	KL
		UNIT-I			
2.	a)	Explain in detail the main sensor node hardware components with a neat diagram.	[5M]	1	2
	b)	Define Wireless sensor networks and mention its advantages.	[5M]	1	1
		OR			
3.	a)	Explain the challenges, Driving Applications of WSN	[5M]	1	2
	b)	Explain about optimization goals and figure of merit.	[5M]	1	2
		UNIT-II			
4.	a)	Design a transceiver in a wireless sensor network for any one application.	[5M]	2	6
	b)	Discuss the design considerations of the transceiver.	[5M]	2	6
		OR			
5.	a)	Explain hidden node and exposed node problems.	[5M]	2	2
	b)	Define MANET and WANET and list the `differences between them.	[5M]	2	1
		UNIT-III			
6.	a)	Generalize the concepts on important classes of MAC protocol.	[5M]	3	2
	b)	Compare the advantages and disadvantages of MAC protocols using directional antennas?	[5M]	3	2
		OR			
7.	a)	With relevant examples explain any two MAC layer protocols in Wireless Sensor Networks	[5M]	3	2
	b)	Explain the Classification of Routing Protocols.	[5M]	3	2
		UNIT-IV			
8.	a)	Explain in brief about the Issues in Designing a Transport Layer Protocol for Ad Hoc Wireless Networks?	[5M]	4	2

	b)	Explain in brief about TCP with explicit link failure notification.	[5M]	4	2
		OR			
9.	a)	Explain the transport layer protocols in detail.	[5M]	4	2
	b)	Explain about Ad Hoc Transport control Protocol network layer.	[5M]	4	2
		UNIT-V			
10.	a)	Explain the network security requirements in sensor networks.	[5M]	5	2
	b)	Discuss about Node level software Platforms.	[5M]	5	6
		OR			
11.	a)	Write short notes on Programming challenges in the sensor network	[5M]	5	1
	b)	Discuss about Ultra-wideband radio communication.	[5M]	5	6

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