

- Instructions:**
- 1) Answer any Three full questions, choosing ONE full question from each module.
 - 2) Figures in rounded () brackets within the question, indicate the scheme of marking for respective part of the question, whereas, figures in the first right column indicate total marks for that whole question.
 - 3) CO is the index number of the Course Outcome statement.
 - 4) The Bloom's taxonomy level (BL) for 1,2,3,4,5 and 6 is remember, understand, apply, analyze, evaluate and create respectively.

			Marks	BT Level	COs
Module 1					
Q.1	A	Explain 3 different Radio propagation mechanisms with a neat diagram.	08	1	1
	B	What is QAM, Draw the constellation diagram for 8 QAM, 4 QAM.	08	2	1
OR					
Q.2	A	List and explain different characteristics of wireless channel	08	1	1
	B	Explain the concept of analog modulation and describe how it is achieved through amplitude modulation and angle modulation.	08	2	1
Module 2					
Q.3	A	Issues and Challenges in Designing a Sensor Network	08	1	2
	B	Describe the different layers of the Unified Network Protocol Framework (UNPF) in a wireless sensor network and explain how they work together to support communication.	09	2	2
OR					
Q.4	A	Compare Ad-hoc wireless network with wireless sensor network	08	1	2
	B	Explain how the clustered architecture in a wireless sensor network organizes sensor nodes into clusters and why this approach improves efficiency.	09	2	2
Module 3					
Q.5	A	Explain two basic mechanisms of location discovery.	08	1	3
	B	Explain how frame shifting occurs during resynchronization in sensor networks and why it is necessary.	09	2	3
OR					
Q.6	A	Briefly describe some mathematical techniques for solving coverage and exposure problems of quality of a sensor network.	08	1	3
	B	Explain the major issue faced by transport layer protocols in wireless sensor networks when providing reliable data delivery and why it is challenging.	09	2	3

