

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER-VII EXAMINATION – SUMMER 2025

Subject Code:3171106

Date:27-05-2025

Subject Name:Wireless Sensor Networks

Time:02:30 PM TO 05:00 PM

Total Marks:70

Instructions:

1. Attempt all questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.
4. Simple and non-programmable scientific calculators are allowed.

		MARKS
Q.1	(a) Enlist the types of Wireless Sensor Networks.	03
	(b) What are the latest technical advancements in the field of wireless sensor network?	04
	(c) Classify MAC Protocols.	07
Q.2	(a) Differentiate Wireless Sensor Network and MANET.	03
	(b) Enlist Applications of Sensor Networks.	04
	(c) Explain the issues and challenges in Wireless Sensor Networks.	07
	OR	
	(c) Write short note on ZigBee architecture.	07
Q.3	(a) Differentiate contention-free and contention-based protocols.	03
	(b) Explain important features of Internet to WSN Communication.	04
	(c) Write a short note on B-MAC protocol.	07
	OR	
Q.3	(a) What is meant by Quality of a sensor network?	03
	(b) Why we need WSN?	04
	(c) Write a short note on S-MAC Protocol.	07
Q.4	(a) Describe Design Principles for WSNs.	03
	(b) Explain the basic principle of Temperature sensors	04
	(c) Explain the XYZ Node Architecture.	07
	OR	
Q.4	(a) Describe WSN to Internet Communication.	03
	(b) What is the need for gateway? Explain in detail.	04
	(c) Explain the Hogthrob Node Architecture.	07
Q.5	(a) Explain Pressure sensors in brief.	03
	(b) Explain in brief: (i) Data dissemination (ii) Data fusion.	04
	(c) Describe different design constraints of of hardware components (sensors) in WSN.	07
	OR	
Q.5	(a) Explain Displacement sensors.	03
	(b) Briefly explain data gathering.	04
	(c) Write a short note IMote Node Architecture.	07
