

**BIRLA INSTITUTE OF TECHNOLOGY, MESRA, RANCHI  
(END SEMESTER EXAMINATION)**

**CLASS: MTECH  
BRANCH: ECE**

**SEMESTER : I  
SESSION : MO/2025**

**SUBJECT: EC507 SENSING & MEASUREMENT**

**TIME: 3 Hours**

**FULL MARKS: 50**

**INSTRUCTIONS:**

1. The question paper contains 5 questions each of 10 marks and total 50 marks.
  2. Attempt all questions.
  3. The missing data, if any, may be assumed suitably.
  4. Before attempting the question paper, be sure that you have got the correct question paper.
  5. Tables/Data hand book/Graph paper etc. to be supplied to the candidates in the examination hall.
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Q.1(a)	Compare the following	[5] 1	2
	a. active and passive transducers		
	b. analog and digital transducers		
	c. primary and secondary transducers		
Q.1(b)	List and explain the various static, environmental and electrical characteristics of transducers	[5] 2	2
Q.2(a)	Compare wave analyzers and spectrum analyzers by giving suitable block diagram.	[5] 2	2
Q.2(b)	Explain the working principle of Vector Network Analyzer by giving suitable diagram.	[5] 2	2
Q.3(a)	Write down the application of RF-ID sensor. Compare between passive and active RF-ID	[5] 3	2
Q.3(b)	Compare RF and RADAR Sensors.	[5] 3	3
Q.4(a)	What is MEMS? Explain its various components.	[5] 4	2
Q.4(b)	With suitable diagram explaining the working of Biosensor. Explain various types of Biosensors and their applications	[5] 2	2
Q.5(a)	Write down the challenges involved in design of wireless sensor network.	[5] 5	2
Q.5(b)	Explain the role of various components of a sensor node in WSN.	[5] 5	3

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