ADAMAS UNIVERSITY PURSUE EXCELLENCE	**ADAMAS UNIVERSITY** **END-SEMESTER EXAMINATION : MAY 2021** (Academic Session: 2020 – 21)		
Name of the Program: (Example: B. Sc./BBA/MA/B.Tech.)	B. Tech	**Semester:** (I/III/ V/ VII/IX)	VIII
Paper Title :	Sensor and Actuators	**Paper Code:**	EEE44104
Maximum Marks :	**40**	**Time duration:**	3 hrs
Total No of questions:	8	**Total No of Pages:**	1
(Any other information for the student may be mentioned here)	1. At top sheet, clearly mention Name, Univ. Roll No., Enrolment No., Paper Name & Code, Date of Exam. 2. All parts of a Question should be answered consecutively. Each Answer should start from a fresh page. 3. Assumptions made if any, should be stated clearly at the beginning of your answer.		

Answer all the Groups

Group A

Answer all the questions of the following $5 \times 1 = 5$

1. a) What are active and passive sensors?
b) What is a transducer?
c) What is the adjacent channel rejection ratio (ACRR)?
d) State basic principle of strain gauge.
e) What is the sensitivity of ferromagnetic plunger-type transducer?

GROUP –B

Answer *any three* of the following $3 \times 5 = 15$

2. Describe the operating principle of the resistive potentiometer with a diagram**.**

3. What is a ferromagnetic plunger-type transducer?

4. Write a short note on gas thermometric sensors.

5. What is LDR?

GROUP –C

Answer *any two* of the following $2 \times 10 = 20$

6. Describe the basic principle of a Hall Device. Show how it can be used for a magnetic field sensor. How is the performance of a hall sensor evaluated? What are its Primary and Secondary sensitivities? (3+2+3+2)

7. State the working principle of stretched diaphragm variable capacitance transducer. What is an ultrasonic sensor? (7+3)

8. Define these terms: Johnson noise, shot noise, Flicker noise, Intersymbol or interference noise. (2.5 × 4)