

**CERTIFICATE IN CONDITION
MONITORING (CCOMO)**

Term-End Examination

December, 2025

MET-002 : MECHATRONICS

Time : 3 Hours

Maximum Marks : 70

Note : Attempt any **seven** questions. All questions carry equal marks.

1. Describe four different sensing modes for photoelectric sensors. 10
2. Differentiate between the following : 5+5=10
 - (a) Resolver and encoder
 - (b) Thermocouple and thermistor
3. Discuss the working of any cam controlled system. 10
4. What is a 4/2 directional control valve ? Explain different methods for actuating the spool. 10

5. Describe any two electrical output devices in a mechatronic system. 10
6. Explain the basic principle of stepper motor. Draw torque-speed curve for stepper motor. 10
7. Draw and explain PLC structure and write the advantages of PLC over micro computer. 10
8. What is polling ? What are the types of software strategies used for interfacing Input output devices ? 10
9. Write short notes on any *two* of the following : 5+5=10
 - (a) Inverse Kinematics
 - (b) Transducers
 - (c) Vane pumps
 - (d) Process control

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