

**CERTIFICATE IN CONDITION
MONITORING**

(CCOMO)

Term-End Examination

June, 2023

MET-002 : MECHATRONICS

Time : 3 Hours

Maximum Marks : 70

Note : (i) *Attempt any **seven** question.*

(ii) *All questions carry equal marks.*

1. Distinguish between the following : 5+5=10
 - (a) Air amplifier and intensifier
 - (b) Ladder logic and relay logic
2. Describe different types of positive displacement pumps. 10
3. (a) Explain the basic principle of stepper motor. 5
 - (b) What is Inverse Kinematics ? What is the importance of path planning ? 5

4. (a) List the features of advanced PLC programming. 5
- (b) Explain simulating digital control systems. 5
5. (a) Describe the functioning of a pilot operated check valve. 5
- (b) What is the function of a tool magazine ? 5
6. Classify the transducers on the basis of the physical property measurement. Explain any *two* of them in details. 10
7. (a) Explain the applications of smart sensors. 5
- (b) What are the major guidelines for the selection of a sensor ? 5
8. (a) Outline advantages and disadvantages of a transfer system. 5
- (b) Describe any *two* electrical output devices in a mechatronic system. 5
9. Write short notes on any *two* of the following :
5+5=10
- (a) Synthesis of circuits
- (b) GRAFCET
- (c) Unipolar Drive