

**CERTIFICATE IN CONDITION MONITORING
(CCOMO)**

Term-End Examination

December, 2022

**MET-001 : METEROLOGY, INSTRUMENTATION AND
TRIBOLOGY**

Time : 3 hours

Maximum Marks : 70

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

1. (a) Why are tolerances provided on dimensions of the components ? 5
- (b) Explain each type of fit, with suitable examples. 5
2. Explain the following terms in mechanical measurements : 5×2=10
 - (a) Calibration
 - (b) Sensitivity
 - (c) Precision
 - (d) Accuracy
 - (e) Errors
3. Discuss in detail the application of a tool-maker's microscope. 10

4. What is a comparator ? Compare mechanical comparator with electrical comparator. 10
5. (a) The divisions on the main scale of a vernier caliper are 0.5 mm apart. The vernier has 100 divisions equal in length to 98 main scale divisions. To what accuracy can the instrument read ? 5
- (b) What are the SI units of the following quantities ? 5
- (i) Resistance
- (ii) Inductance
- (iii) Capacitance
- (iv) Current
- (v) Luminous Intensity
6. (a) What are the slip gauges ? How are they used with sine bar ? Discuss in detail. 5
- (b) Discuss any two types of limit gauges with their applications. 5
7. List the essential parts of a micrometer and explain its working giving a neat sketch. 10
8. What are angle gauges ? Explain with suitable examples, how these are used for measuring angles. Also, mention the specific applications of angle gauges. 10
9. Give a brief description about the important parts of a Co-ordinate Measuring Machine (CMM). _____ 10