MODEL QUESTION PAPER - I

Time : 3 Hrs **Max Marks : 100**

[N. B: 1. Answer all questions.

2. Part A 10 x 3 = 30 Marks

3. Part B 5 x 14 = 70 Marks

PART – A

1. What is metrology?
2. What are the sources of errors?
3. What is the principle of sine bar?
4. What are the advantages of mechanical comparator?
5. Define a gear and list the types of gear.
6. Name any four elements to be measured in a gear.
7. What is an Interferometer? List its types.
8. What are the advantages of coordinate measuring machine?
9. What is load cell? Mention its types.
10. What are the advantages of rotameter?

PART – B

11. (a) What are objectives of metrology. (7)

    (b) Explain the various classification of errors. (7)

    (Or)

    (c) Explain briefly the factors affecting the accuracy of measuring system. (14)

12. (a) Write short notes on (i) steel rule (ii) calipers (7)

    (b) Explain with sketch, the vernier bevel protractor. (7)

    (Or)

(c) Explain the micrometer with a neat sketch. (7)

(d) What are difference between a comparator and measuring instrument? (7)

13. (a) Explain with neat sketch, the nomenclature of external and internal turned. (14)

(Or)

(b) What are the errors associated with gears? Explain all the errors. (14)

14. (a) Clearly explain the AC laser interferometer with sketch and mention their advantages. (14)

(Or)

(b) Explain the coordinate measuring machine with a neat sketch. (14)

15. (a) Explain the equal arm balance method of direct force measurement. (7)

(b) Explain Hydraulic load cell with neat sketch. (7)

(Or)

(c) Explain DC Dynamometer with neat sketch. (7)

(d) With a neat diagram, explain the strain gauge in torque measurement. (7)