

III B. Tech I Semester Supplementary Examinations, June/July-2022
MECHANICAL MEASUREMENTS & METROLOGY
(Mechanical Engineering)

Time: 3 hours

Max. Marks: 75

Answer any **FIVE** Questions **ONE** Question from **Each unit**
All Questions Carry Equal Marks

UNIT-I

1. a) Give the generalized configuration of measuring instruments. [8M]
b) Give the dynamic performance characteristics of measuring instruments. [7M]

(OR)

2. a) Explain the working of photoelectric transducers. [8M]
b) Briefly explain the electrical transducer. [7M]

UNIT-II

3. a) Describe the working of resistance strain gauge and its usage. [8M]
b) Explain the working of elastic force meter. [7M]

(OR)

4. a) Discuss the construction and working of torsion meter. [8M]
b) What is the use of dynamometer? [7M]

UNIT-III

5. a) What is interchangeability and selective assembly? Explain. [8M]
b) Explain the process of design of Go and No Gauge, with suitable example. [7M]

(OR)

6. a) Explain the hole basis and shaft basis system. [8M]
b) Describe the terms Nominal size, Limits and Fits. [7M]

UNIT-IV

7. a) Describe the working of Michelson's interferometer with a neat sketch. [8M]
b) What is the principle of Auto-Collimator? [7M]

(OR)

8. a) Explain the working of NPL interferometer. [8M]
b) Describe the working Pneumatic Comparator. [7M]

UNIT-V

9. a) Give the methods of measurement of Surface finish by CLA, RMS and R_{10} . [8M]
b) Enumerate the methods of measurement of Errors in Screw threads. [7M]

(OR)

10. a) Write the principle of Auto-Collimator. [8M]
b) Explain the working of Gear tooth Vernier. [7M]

