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Total No. of Pages : 02

Total No. of Questions : 08

M.Tech.(PE) (E-III) (Sem.-3)
METROLOGY & INDUSTRIAL INSPECTION

Subject Code : PE-521

M.Code : 39020

Time : 3 Hrs.

Max. Marks : 100

INSTRUCTION TO CANDIDATES :

- 1. Attempt any FIVE questions out of EIGHT questions.**
- 2. Each question carries TWENTY marks.**

1.
 - a) Differentiate between line, end and wavelength standards. Cite examples to support your answer.
 - b) Describe briefly the design and manufacture of slip gauges.
2.
 - a) Explain with the help of neat sketches the principle and construction of an auto-collimator.
 - b) Draw a neat diagram to illustrate the use of sine bar for measurement of angle and explain it briefly.
3.
 - a) Describe principle and operation of Taylor-Hobson roughness instrument,
 - b) What is interferometry? Explain its basic applications.
4.
 - a) Explain in brief the screw thread terminology.
 - b) Describe the tooth displacement method for checking the involute profile of a spur gear.
5. State the principle of working of :
 - a) Mechanical comparator
 - b) Optical comparator
 - c) Electrical comparator
 - d) Pneumatic comparator.

6.
 - a) Describe the two - wire method of measuring the effective diameter of a screw thread.
 - b) Explain the constant chord method for tooth thickness measurement of a gear.
7. Elaborate in detail with respect to management of inspection and quality control :
 - a) Selection of gauging equipment
 - b) Types of inspection
8. Explain the following :
 - a) Application of interferometry
 - b) One method for testing flatness of surface
 - c) Interchangeability
 - d) Application of thread gauges

NOTE : Disclosure of Identity by writing Mobile No. or Making of passing request on any page of Answer Sheet will lead to UMC against the Student.