

Roll No.:

--	--	--	--	--	--	--	--	--	--

B.E/B.Tech. (FT) DEGREE END SEMESTER EXAMINATION APRIL/MAY 2011

INDUSTRIAL ENGINEERING BRANCH

III SEMESTER- (REGULATION 2004)

IE272 –Metrology and Inspection

Answer All Questions

PART 'A' (10 x 2 = 20 Mark)

1. State advantage of light standard
2. Write the difference between precision and accuracy
3. List the various angular measuring instruments?
4. State the possible sources of error in micrometers
5. Define primary texture
6. Name any two methods to measure the pitch of the thread
7. Define the term tolerance
8. Name the different geometrical tolerances
9. List the types of CMM
10. List any four non destructive testing method

(PART B – 5 X 16 = 80)

- 11 i) State the meaning of wringing. What is the procedure of wringing the slip Gauges (8)
ii) Define the a) allowance b) Limits c) Tolerance d) fit (8)

- 12 a) i) Explain the working principle of autocollimator and briefly discuss its application (16)

OR

- 12 b) i) State the working principle, advantages and disadvantages of mechanical comparators (8)
ii) Define least count of vernier instrument. How is it determined? Explain (8)

13 a) i) Define the term 1. Primary texture 2. Secondary texture. State the factors affecting surface texture (8)

ii) With the help of neat sketch describe the construction and working of Tomilson surface meter (8)

OR

13 b) i) Describe measuring effective diameter of internal threads using tool maker microscope (8)

ii) Explain the method used for checking pitch of the gear (8)

14 a) i) State the advantage and possible sources of errors in CMM (8)

ii) Explain bridge type of CMM with neat diagram (8)

OR

14 b) Explain in detail, the operation of a machine vision system, with a block diagram (16)

15 a) Explain any two non-destructive testing methods (16)

OR

15 b) Describe the following in connection with flow measurement

i) Rotometer (8)

ii) Venturimeter (8)