

yogesh  
11/03/2016

University  
**VEER SURENDRA SAI INSTITUTE OF TECHNOLOGY, BURLA**

Mid-Semester Examination, March 2016

**Subject: Inspection and Metrology**

Branch: **Production Engg.**

Semester: 6<sup>th</sup> semester (B. Tech)

(Answer any four questions including Question No. 1)

Full Marks: 20

Time: 2 hours

1. (i) What is the need of inspection in metrology? [5]

(ii) Write the difference between precision and accuracy.

(iii) Write the Taylor's principle for gauge design.

(iv) Classify the different types of plane gauges.

(v) Write down the advantages of interchangeability.

2. (a) Briefly describe about the different types of errors that arise during measurement. [2.5+2.5]

(b) What are the different factors that may affect the accuracy of a measuring system?

3. With a neat sketch briefly explain the working principle of Talysurf instrument. [5]

4. Design the general type GO and NO GO gauges for components having 30H7f8 fit. Given: (i) The fundamental [5]

deviation for  $f_{\text{shaft}} = -5.5D^{0.41}$ , (ii)  $i = 0.45 (D)^{1/3} + 0.001D$ , (iii) 30 mm falls in the diameter step of 18 and 30 mm.

5. Derive the Two-wire method of finding effective diameter of screw thread and also find out the best wire size. [5]

6. Write down the difference between: [2.5+2.5]

(i) Line standard & End standard

(ii) Measuring instruments & Gauges

\*\*\*\*\*