Sem V / CBSS / AUTO / MQE / N-D - 15

24/11/15

Q.P. Code : **5618**

(3 Hours) [Total Marks :80

N.B. : (1) Question **No.1 is compulsory**
(2) Attempt any **three** questions out of remaining **five** questions.
(3) Figures to the right indicate full marks
(4) Assume suitable data wherever necessary.

1. Attempt any **four**:- 20
   (a) Discuss use of $\overline{X}$ and R charts in quality control.
   (b) Explain the evaluation of surface finish by using ten point height method.
   (c) What is Taylor's principle of gauge design.
   (d) Explain the term quality and quality control.
   (e) Compare pheumatic and mechanical comparators.

2. (a) Differentiate between a 'Hole basis' and "shaft basis" system of tolerances used in engineering fits. State one practical example of each of the system. Why 'H' hole is taken as reference in hole basis system? 10
   (b) Define and indicate fallowing gear tooth parameters on an involute tooth profile sketch. 10
   (i) Base pitch (ii) Root diameter
   (iii) Working depth of tooth (iv) Dedendum.
   (v) Pitch circle diametor

3. (a) Explain the principle and working of electrical comparator along with its advantages and limitations 10
   (b) What are the methods to measure the major and minor diameter of external thread. Describe with neat sketches. 10

4. (a) Explain construction and working of any one surface roughness measuring instrument. 10
   (b) What is OC curve? Explain the terms consumer risk, AQL and RQL with respect to it 10

5. (a) Explain construction and working of laser interferometer 10
   (b) Define and explain various types of cost of quality with suitable examples 10

6. Write short notes on (any **four**) 20
   (a) 3 D co-ordinate measuring machine.
   (b) Gantt chart
   (c) Surface roughness symbols
   (d) Profile projector
   (e) Objectives of quality control.
