Sem V / CBGS / Auto / MQE / M-J-16

17/05/16

QP Code : 31100

(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,** if required.

1. Answer any four questions :- 20
   (a) Explain types of fits with suitable examples.
   (b) Explain various surface roughness symbols with neat sketches.
   (c) State and explain Taylor's principle of guage design.
   (d) What are the objectives of quality control.
   (e) Explain the concept of waviness and Roughness.

2. (a) Explain three wire method used in screw measurement. 10
   (b) Explain P and np chart with their application. 10

3. (a) Explain the principle of Electrical comparator. State its advantages and limitations. 10
   (b) Explain the construction and working of any one surface measuring instrument. 10

4. (a) What is OC curve ? Explain the term consumer Risk, AQL and RQL with respect to it. 10
   (b) How will you compromise between Quality and cost. Explain with suitable example. 10

5. (a) Following data gives details of quality control with respect to weight of certain object - 10
   Weight required = 500 grams
   Tolerance = ± 3 grams
   Process study details - 20 samples of size 5

$$\sum \bar{X} = 9960$$

$$\sum R = 100$$

   Draw control chart and comment on process capability.
   (for sub group size of 5, $A_2 = 0.58$
   $D_4 = 2.11$
   $D_3 = 0$)
   (b) How is gear measurement carried out using Parkinson's Tester ? 10

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6. Write short notes on : (**any four**) 20
   (a) Gantt Chart
   (b) Laser interferrometer
   (c) 3D - CMM
   (d) Tool maker microscope
   (e) Elements of surface texture
