19/11/15

MECH - VI^th Sem - MQE (CBGS)

19 NOV 2015

QP Code : 6254

Total Marks:80

Duration:3 Hours

N.B:-

1. Question No.1 is compulsory
2. Solve any three Questions from remaining questions
3. Assume suitable data if required and mention it clearly

Q1 A] Differentiate between precision and accuracy. [5]

B] What do you mean by quality of design? [5]

C] What do you mean by waviness and roughness? [5]

D] Explain advantages and limitations of pneumatic comparators. [5]

Q2 A] Explain Taylors Principle of Gauge design with suitable example. [10]

B] Explain principle, construction and working of Parkinson's Gear Tester. [10]

Q3 A] Explain principles of interference. How flatness can be checked with the help of optical interferometer. [10]

B] How will compromise between quality and cost. Explain different types of cost of quality with suitable examples [10]

Q4 A] Explain following terms with respect to surface roughness parameters -

i. R_a
ii. R_z
iii. RMS [10]

B] Control Chart for $\bar{X}$ and R are kept on the weight in kilograms of a colour pigment for a batch process. After 25 subgroups with subgroup size of 4

$\sum \bar{X}=52.08$ kg

$\sum R=11.82$

Assuming process is in state of control, Compute the $\bar{X}$ and R chart central line and control limits.

(For subgroup size of 4, A2=0.729 D4=2.282 D3=0 d_2=2.059) [10]

Q5 A] Explain two wire method used in screw thread measurement [10]

B] Explain various modern SQC tools. [10]

Q6 A] Explain single and double samplings plans. Also Explain concept of OC curves [10]

B] Explain construction and working and applications of 3D coordinate measuring machine. [10]

MD-Con. 7325-15.