

T.E. Sem VI CBSSGS  
Mechanical Engg.  
Metrology & Quality Engg.

10/5/2016  
3 pm to 6 pm

Q. P. Code : 601000

(3 Hours)

Total MARKS: 80

N.B.: -

1. Question No.1 is compulsory
2. Attempt any three questions from remaining questions.
3. Assume suitable data if necessary and mention the same clearly

- Q1 A) Explain principles of interference [5]  
B) Explain objectives of quality control. [5]  
C) Differentiate between roughness and waviness. [5]  
D) Differentiate between precision and accuracy [5]
- Q2 A) Explain different types of fits. Also Explain Taylor's principle of gauge design. [10]  
B) Explain following terms with respect to gear measurement-  
i. Measurement using rollers [10]  
ii. Gear tooth comparator [10]
- Q3 A) With the help of suitable diagram explain construction and working of Laser Interferometer [10]  
B) Explain different type of quality costs. [10]
- Q4 A) With reference to Surface roughness parameters explain following terms-  
i.  $R_a$   
ii.  $R_v$   
iii.  $R_z$   
iv. RMS value [10]  
B) Do you agree with following statement? If yes why? If not why? Justify your views  
"If all points in X and R chart lies within UCL (Upper Control Limit) and LCL (Lower Control limit, all parts should be accepted" [10]
- Q5 A) Explain three wire method in screw thread measurement [10]  
B) Explain in brief modern SQC tools [10]
- Q6 A) Sketch typical OC curve and also explain following terms-  
i. Acceptable Quality Level (AQL)  
ii. Producer's Risk [10]  
iii. Consumer's Risk [10]  
B) Explain principle of working, construction, and applications of Profile Projector. [10]