S.B. Roll No……

METROLOGY AND INSTRUMENTATION

6th /Mech/RAC/5319/Nov'15

Duration: 3 hrs. **M.Marks=75**

SECTION-A

Q1:- Fill in the blanks: - **1x15=15**

a) Micrometers are designed on the principles of _____and _____
b) The sine bar should not be used for checking angle greater than _____degree.
c) A Feeler gauge is used to check _____
d) The circular scale of micrometer is made on its _____
e) Clinometer is a _____measurements instrument.
f) An auto-callimetar is an optical device to measure _____deflection.
g) The irregularities of small wavelength is called _____
h) Three wire method is used for measuring _____of screw.
i) The techometer is used for measuring _____
j) SQC stands for _____
k) L.V.D.T. stands for _____
l) _____converts one form of energy into Another form.
m) Honing has more _____lapping.
n) The gauge number varies _____as the size of wire.
o) _____vernier is used to measure the thickness of gear tooth.

SECTION-B

Q2:- Attempt any FIVE questions: - **5x6=30**

a. What are slip gauges? How these are used for measurements?
b. What are Primary and Secondary textures?
c. What is Sine Bar? How it is used to measure angle?
d. Explain controllable and random error?
e. What are the different gauges used for checking thread angle?
f. Explain the working of Linear-Variable Differential Transformer Transducers.
g. What are strain gauges and Load cells?
h. Define TQM? What are its elements?
i. Explain the working principle of Micrometer?

SECTION-C

Attempt any THREE questions: - **10x3=30**

a. Explain Line standards, End Standards, wavelength standards.
b. Explain the working of Peizo-electric Accelerometer and Seismic Accelerometer.
c. Explain any two methods for Tooth thickness measurement.
d. Explain the principle, construction and working of Auto-collimator with sketch?
e. Explain the construction and working of Tomlinson surface meter for measuring surface roughness?