Q.P. Code: 16ME326 **R16**

Reg. No: | | | | | | | | | | |

SIDDHARTH INSTITUTE OF ENGINEERING & TECHNOLOGY:: PUTTUR

(AUTONOMOUS)

B.Tech IV Year I Semester Regular & Supplementary Examinations Feb-2021

METROLOGY & MEASUREMENTS

(Mechanical Engineering)

Time: 3 hours Max. Marks: 60

(Answer all Five Units **5 x 12 = 60** Marks)

UNIT-I

1 Construct the conventional diagram of limits and fits and explain all terms. **12M**

OR

2 Between two mating parts of 100 mm basic size, the actual interference fit is to be from 0.05mm to 0.12mm. The tolerance for hole is the same as the tolerance for the shaft. solve the size of the shaft and the hole on (i) hole basis unilateral system ii) Shaft basis unilateral system. **12M**

UNIT-II

3 Elaborate the construction and uses of **12M**
i) Vernier bevel protractor ii) Vernier height gauge.

OR

4 Illustrate in detail the working of the Sine Bar to measure unknown angle. **12M**

UNIT-III

5 List out the various elements that you would measure in a screw thread? Also list the instruments that are required for measuring these elements. **12M**

OR

6 **a** What are the errors and its causes in screw threads? **5M**
b Give details about three wire method of measuring effective diameter of screw threads. **7M**

UNIT-IV

7 Classify digital transducers? Elaborate piezoelectric effect and sketch with neat Piezo-electric transducer. **12M**

OR

8 What is the principle of strain gauge? Explain the method of usage for measurement of strains. **12 M**

UNIT-V

9 List out thermal expansion methods and describe electrical resistance sensor of RTD with neat sketch. **12M**

OR

10 Sketch a Mcleod gauge and explain working principles. Describe applications and limitations. **12M**

*** END ***