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**SIDDHARTH INSTITUTE OF ENGINEERING & TECHNOLOGY:: PUTTUR**  
(AUTONOMOUS)**B.Tech IV Year I Semester Supplementary Examinations November-2020****METROLOGY & MEASUREMENTS****(Mechanical Engineering)**

Time: 3 hours

Max. Marks: 60

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

- 1 a Differentiate between 'Hole basis system' and 'Shaft basis system' of fits. **6M**  
b Define deviations. Explain types of deviations with the help of sketches. **6M**

**OR**

- 2 What are the different types of limit gauge? Explain any five limit gauges. **12M**

**UNIT-II**

- 3 Explain with the help of neat sketches the principle and construction of an auto collimator. **12M**

**OR**

- 4 Explain the following methods of qualifying surface roughness: **12M**  
(i) Ra value. (ii) RMS value. (iii) Rz value.

**UNIT-III**

- 5 a Explain three wire method of measuring effective diameter of screw threads. **6M**  
b Explain errors in screw threads. **6M**

**OR**

- 6 With the help of an illustration, explain any four alignment tests on milling machine. **12M**

**UNIT-IV**

- 7 a Explain working Principle of Vibrometer with neat sketch. **6M**  
b Explain working Principle of Accelerometer with neat sketch. **6M**

**OR**

- 8 Discuss in detail about Piezo electric transducer. **12M**

**UNIT-V**

- 9 Discuss the U- tube Differential Manometer in detail. derive the expression for pressure difference. **12M**

**OR**

- 10 a Discuss the U- tube Manometer in detail. **6M**  
b Explain Piezometer in detail. **6M**

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