Code : 15ME33T

Register Number | | | | | | | | | | |

III Semester Diploma Examination, April/May-2019

MECHANICAL MEASUREMENTS

Time : 3 Hours] **[Max. Marks : 100**

Instructions : (i) Answer any **six** questions from PART – **A**.
(ii) Answer any **seven** questions from PART – **B**.

PART – A

1. Explain Systematic and Random Error. **5**

2. Define : **5**
   (a) Sensitivity
   (b) Accuracy
   (c) Threshold
   (d) Calibration

3. Define strain gauge and state its purposes. **5**

4. List the various piezo-electric materials. **5**

5. State the difference between Resistance – thermometer and thermocouple. **5**

6. Explain with neat sketch the working of revolution counter. **5**

7. State the advantages of Resistance thermometer. **5**

8. Explain with a neat sketch hydrometer. **5**

9. Define the following terms : **5**
   (a) Deviation
   (b) Actual size

PART – B

10.	(a)	Explain with neat sketch, plain plug gauge.	5
	(b)	Explain with neat sketch use of sine bar.	5
11.	(a)	Explain with neat sketch thread gauge micrometer.	5
	(b)	Explain calibration procedure of measuring instrument.	5
12.	(a)	State the advantages and limitations of mechanical strain gauge.	5
	(b)	Give the classification of strain gauges.	5
13.	(a)	State the factors to be considered for selection of transducers.	5
	(b)	Explain with neat sketch two elements rosette gauge.	5
14.	(a)	Explain with neat sketch the spring balance.	5
	(b)	Explain with a neat sketch Prony brake dynamometer.	5
15.	(a)	Sketch and label Bourdon Tube Pressure gauge.	5
	(b)	Explain with a neat sketch the working principle of thermocouples.	5
16.	(a)	Explain with a neat sketch resistance thermometer.	5
	(b)	Explain with a neat sketch LVDT.	5
17.	(a)	Explain the working of hair hygrometer with a neat sketch.	5
	(b)	Explain with neat sketch liquid level measurement by using sight glass.	5
18.	(a)	Differentiate between Hole basis and shaft basis system.	5
	(b)	Explain with a neat sketch (i) Clearance fit (ii) Interferences fit	5
19.	(a)	Explain with a neat sketch checking of run-out of axis of centre in lathe.	5
	(b)	List the various types of testing equipments used for machine tool alignment test.	5