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B. E. (Fourth Semester) Examination, April-May 2020

(Old Scheme)

(Mech. Mechatronics Engg. Branch)

MECHANICAL MEASUREMENT & METROLOGY

Time Allowed : Three hours

Maximum Marks : 80

Minimum Pass Marks : 28

Note : *All question are compulsory. Attempt any* ***two*** *parts from parts (b), (c) & (d) and (a) part is compulsory. Diagram must if required.*

Unit-I

1. (a) Define ther term"Measurement". 2

   (b) Explain Generalised Measurement System with flow charts. 7

   (c) Explain any 3 static performance characteristics of measurement devices. 7

(d) Explain briefly the different source of Errors. 7

Unit-II

2. (a) Define Gauge. 2

(b) Classified the angular velocity measurement devices. 7

(c) Explain any one pressure measurement device. 7

(d) Explain Mcleod Gauge with diagram. 7

Unit-III

3. (a) Define the term "Strain". 2

(b) Explain Ultrasonic flow meters with 2 advantages. 7

(c) What do you mean by Vibrations Measurement? Write its causes, harmful effects and remedies. 7

(d) Explain Data Acquisition System. 7

Unit-IV

4. (a) Define the term "Metrology". 2

(b) Explain Gauge block with diagram. 7

(c) Explain principles of Optical projectors. 7

(d) Explain Autocollimators with diagram. 7

Unit-V

5. (a) Define the term "Surface Texture". 2

(b) Explain principles and uses of Interferometry. 7

(c) Define Comparators. Also explain any one types of Mechanical Comperators. 7

(d) Define Screw Thread with its classifications. Also write what are the measuring elements of a Screw-thread. 7