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Roll No. .....

303(O)

B. E. (Third Semester) EXAMINATION, June, 2010

(Old Scheme)

(Common for AU, CM, EC, EE, EI, IP, IT, ME & TX Engg. Branch)

INSTRUMENTATION & MEASUREMENT

Time : Three Hours

Maximum Marks : 100

Minimum Pass Marks : 35

Note : (i) Attempt any *five* questions.

(ii) All questions carry equal marks.

1. (a) Define accuracy, precision, sensitivity, resolution.

   (b) How many types of errors are there ? Explain in detail.

2. (a) Describe with block diagram the working of CRO.

   (b) Draw the circuit diagram for Dchering bridge and obtain the expression for balance condition. Also discuss its applications.

3. (a) Explain the working of Wien's bridge with circuit diagram and obtain the expression for balance condition.

   (b) Give the classification of transducers in detail.

4. (a) Derive an expression for the guage factor of a strain gauge.

   (b) Explain the operation of LVDT. Mention its applications.

5. Explain the following with circuit diagram :

   (i) Function generator

   (ii) Spectrum analyser

6. (a) Give the advantages of digital instruments over analog instruments.

   (b) With the help of circuit diagram explain Ram type DVM.

7. (a) Explain uncertainty measurement with scalar and vector network.

   (b) Discuss fiber optic power measurement.

8. Write short notes on any *two* of the following :

   (i) Electronic multimeter

   (ii) Thermocouple

   (iii) Frequency meter

   (iv) RS 232 C

   (v) Optical time domain reflectometry