Registration No. : | | | | | | | | | | |

Total number of printed pages – 2

B. Tech

CPEC 5303

Fifth Semester (Special) Examination – 2013

ELECTRONICS MEASUREMENT AND MEASURING INSTRUMENTS

BRANCH CODE : EC, ETC

QUESTION CODE : D 311

Full Marks – 70

Time : 3 Hours

*Answer Question No. **1** which is compulsory and any **five** from the rest.*
The figures in the right-hand margin indicate marks.

1. Answer the following questions : 2×10

   (a) Define error.

   (b) Write the detectors used for DC and AC bridges.

   (c) Write few advantages of electronics voltmeters.

   (d) List which can be measured using electronics multimeter.

   (e) What is meant by signal analysis ?

   (f) What is a Spectrum ?

   (g) What is Transducer ?

   (h) What is meant by data acquisition ?

   (i) What is meant by interfacing ?

   (j) What is GPIB Bus ?

2. (a) Define Accuracy, Precision, Resolution, Reliability and Repeatability. 5

   (b) Draw circuit diagram of Maxwell's bridge and derive the expression of unknown components at balanced condition. 5

P.T.O.

3. (a) Draw circuit diagram of amplified DC meter and explain it's operation. 5

(b) Draw functional block diagram of any one digital voltmeter and explain it's operation. 5

4. (a) Draw functional block diagram of a Wave Analyzer and explain it's operation. 5

(b) Briefly describe construction and working of a simple frequency counter. 5

5. (a) Briefly describe construction and working of Strain Gauge. 5

(b) Describe construction and working of any one Displacement Transducer. 5

6. (a) Describe working of a simple Digital Data Acquisition System. 5

(b) Briefly describe techniques of interfacing transducer to electronics control and measurement system. 5

7. (a) Draw circuit diagram of an Instrumentation Amplifier and derive the expression of it's output voltage. 5

(b) Draw circuit diagram of an Isolation Amplifier and explain it's operation. 5

8. Write short notes on any two of the following : 5×2

(a) True rms responding voltmeter-Circuit diagram and operation

(b) Spectrum Analyzer-Functional block diagram and operation

(c) Computer Controlled Test system.