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EX–604

B. E. (Sixth Semester) EXAMINATION, June, 2012

(Electrical & Electronics Engg. Branch)

ELECTRONIC INSTRUMENTATION

(EX – 604)

Time : Three Hours

Maximum Marks : 100

Minimum Pass Marks : 35

Note : Attempt all questions. All questions carry equal marks.

1. (a) What is CRO ? Draw the block diagram of a general purpose CRO and explain different parts. 10

   (b) What is the difference between dual trace CRO and DSO ? Also give the applications and advantages of DSO. 10

Or

   (a) An electrically deflected CRT has a final anode voltage of 2000 volts and parallel deflecting plates are 1·5 cm long and 5 mm apart. If the screen is 50 cm from the centre of deflecting plates, find : 10

   (i) beam speed

   (ii) deflection sensitivity

   (iii) deflection factor of tube

P. T. O.

(b) How will you generate Lissajous pattern on CRO ? Explain proceduce to measure unknown frequency and phase using Lissajous pattern. 10

2. (a) Explain Anderson's bridge with analysis and phasor diagram. 10

(b) Discuss sources of errors in bridge circuit and Wagner's earthing device. 10

Or

(a) Describe Hays and Schering bridges with circuit diagram and analysis. 10

(b) Explain the following terms : 10

(i) Wien's bridge

(ii) Q-meter and its application

(iii) De-Sauty bridge

3. (a) What is Transducer ? Classify them and explain strain gauge and gauge factor. 10

(b) Explain thermistor and thermo couple. 10

Or

(a) Explain LVDT with diagram, working, analysis and curve. 10

(b) Discuss about opto-electronic transducer and special encoders. 10

4. (a) Draw block diagram of AF sine and square wave generator and explain working. 10

(b) What is the difference between noise and error ? Explain noise generator with diagram. 10

Or

(a) What is an Oscillator ? Explain fixed and variable frequency AF oscillator. 10

(b) Explain the following terms : 10

(i) TV sweep generator

(ii) Spectrum analyzer

5. (a) Explain successive approximations type and ramp type digital voltmeter. 10

(b) Advantages of digital instruments over analog instruments. 10

Or

(a) Explain the following items : 10

(i) Digital capacitance meter with diagram

(ii) Analog and X-Y recorders

(b) Describe digital frequency meter and LCD with suitable diagram. 10