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10IT35

**Third Semester B.E. Degree Examination, Dec.2016/Jan.2017**  
**Electronic Instrumentation**

Time: 3 hrs.

Max. Marks:100

**Note: Answer any FIVE full questions, selecting  
atleast TWO questions from each part.**

**PART – A**

- 1
  - a. Discuss briefly : (i) Gross error      (ii) Systematic error. (04 Marks)
  - b. Explain with neat circuit diagram full wave rectifier type AC voltmeter. (08 Marks)
  - c. Explain the working of true RMS voltmeter, with a neat block diagram. (08 Marks)
- 2
  - a. Write the advantages of digital instruments over analog instruments. (04 Marks)
  - b. Explain the ramp type digital voltmeter with the help of a block diagram. (08 Marks)
  - c. With a neat block diagram explain the digital frequency meter. (08 Marks)
- 3
  - a. Explain the function of various controls on the front panel of a CRO. (04 Marks)
  - b. With neat block diagram, explain dual trace oscilloscope. (10 Marks)
  - c. With the help of basic block diagram explain the working principle of electronic switch. (06 Marks)
- 4
  - a. Explain the operation of digital storage oscilloscope with the help of a block diagram. Mention the advantages. (10 Marks)
  - b. With a neat block diagram explain the sampling oscilloscope. (10 Marks)

**PART – B**

- 5
  - a. Explain in detail the working of sine and square wave generator. (10 Marks)
  - b. Explain with neat block diagram operating principle of function generator. (10 Marks)
- 6
  - a. Explain the Wheatstone bridge and derive the balance equation for Wheatstone bridge. Mention the limitations. (12 Marks)
  - b. With a neat block diagram explain the Wagner's earth connection. (08 Marks)
- 7
  - a. What are the factors to be considered for the selection of better transducer? Explain. (08 Marks)
  - b. Explain the construction, principle and operation of LVDT. (12 Marks)
- 8
  - a. Compare LED displays and LCD displays (Any four). (04 Marks)
  - b. Explain the procedure of measuring power using a Bolometer in a bridge circuit. (10 Marks)
  - c. Write an explanatory note on signal conditioning. (06 Marks)

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Important Note: 1. On completing your answers, conspicuously draw diagonal lines from the top right corner to the bottom left corner.  
2. Any revealing of identification, appeal to evaluator and /or equations written eg. 42+8 = 50, will be treated as malpractice.