Total No. of Questions :5] *[Total No. of Printed Pages : 2*

Roll No .....

EC - 303

B.E. III Semester

Examination, June 2016

Electronic Instrumentation

Time : Three Hours

Maximum Marks : 70

Note: i) Answer five questions. In each question part A, B, C is compulsory and D part has internal choice.

ii) All parts of each question are to be attempted at one place.

iii) All questions carry equal marks, out of which part A and B (Max. 50 words) carry 2 marks, part C (Max. 100 words) carry 3 marks, part D (Max. 400 words) carry 7 marks.

iv) Except numericals, Derivation, Design and Drawing etc.

1. a) Differentiate between accuracy and precision.
   b) What do you mean by loading effect?
   c) List the factors, which affects the accuracy.
   d) Explain the working of Peak responding voltmeter with suitable diagram.

   OR

   Where calorimeter is used explain its working principle with suitable block diagram.

2. a) What is the use of graticules, write down its types.
   b) Discuss briefly, the application of storage CROs.
   c) What is the need of time base circuit?
   d) Explain the working of sampling type CRO with suitable diagram.

   OR

   Explain the principle of electrostatic focusing with suitable diagram.

3. a) What is strain gauge? Discuss.
   b) What are the main advantages of measurement using bridges?
   c) Differentiate between transducers and Actuators.
   d) Explain the working principle of RTD. Also discuss various types of thermocouples.

   OR

   Explain the working of nuclear radiation detector along with diagram and write down their applications.

4. a) What do you mean by
      i) ON time
      ii) Pulse width
   b) Define rise and fall time of an analog signal.
   c) If the duty cycle of a digital pulse is 50% and the ON time is t see. What will be the off time of the pulse.
   d) List the advantages and disadvantages of digital display devices over analog display devices.

   OR

   Explain the working principle of function generator, along with a suitable block diagram.

5. a) Write down the applications of ADCs and DACs.
   b) How many bits are required for 1mv resolution for a 1 volt full scale range.
   c) How we can increase the resolution of digital measuring instruments.
   d) Explain the working principle of Ramp type ADC.

   OR

   Explain the working principle of input interface module of PLC with suitable block diagram.

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