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

Roll No .....

EC-303

B.E. III Semester

Examination, December 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 questions 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) Define resolution of a measuring instrument.
   b) What do you mean by linearity?
   c) Explain hysteresis graph w.r.t. a measuring instrument.
   d) Explain the working principle of Bolometer for power measurement along with a neat diagram.

   OR

   Explain the working principle of true RMS type thermocouple based voltmeter along with a suitable diagram.

2. a) Why post deflection acceleration is necessary?
   b) List the importance of using measuring probes.
   c) Why graticules are necessary in CRO?
   d) Explain the working principle of analog storage type CRO.

   OR

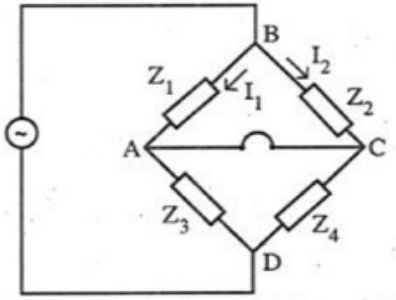
   What do you mean by electrostatic focusing? Explain along with a suitable diagram.

3. a) Write down the uses of wagner earth detector.
   b) What is Photo Transistor?
   c) What do you understand by RTDs?

   d) What are the different optical transducers? Explain their working principle.

   OR

   The bridge shown in figure is in balance condition with arm AB, R=450 Ω, arm BC, R = 300Ω in series with C = 0.265 μF, arm CD unknown, DA, R = 200 Ω in series with L = 15.9mH. If the oscillator frequency is 1 kHz. Find the constants of arm CD.



4. a) For a square pulse, define ON time and OFF time.
   b) For a 10 Hz square pulse, with 50% duty cycle. What will be the ON time of the pulse.
   c) Differentiate between LCD and LED.
   d) Explain the working principle of square wave generator with suitable block diagram.

   OR

   Discuss about the classification of display devices with their principle of working?

5. a) What is signal conditioner in digital data acquisition system?
   b) What is the use of S and H circuit?
   c) Write down the advantages of P.LCs. over relay logic controllers.
   d) Explain the working principle of dual slope integrating type ADC along with a suitable diagram.

   OR

   Explain the principle of working of weighted DAC using Op-Amp and transistor. Also draw a suitable diagram.

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