

2006 Scheme

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06IT35

Third Semester B.E. Degree Examination, June 2012 Electronic Instrumentation

Time: 3 hrs.

Max. Marks: 100

Note: Answer FIVE full questions, selecting at least TWO questions from each part.

PART – A

- 1 a. Explain the following; (i) Gross errors; (ii) Random errors; (iii) Accuracy and precision. (06 Marks)
- b. Explain the working of a RMS responding voltmeter with the help of a suitable block diagram. (07 Marks)
- c. Find the voltage reading and percentage error of each reading obtained with a voltmeter on (i) 6 V range; (ii) 15 V range; (iii) 30 V range, if the instrument has 20 k Ω /V sensitivity and it is connected across R_b . (07 Marks)

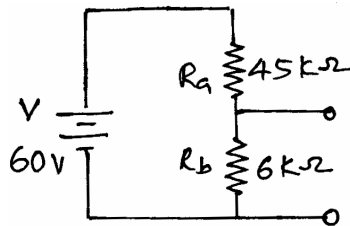


Fig.Q1(c)

- 2 a. Explain the block diagram of successive approximation type DVM. (10 Marks)
- b. (i) Determine the resolution of a 4 $\frac{1}{2}$ digit display for 1V and 10V range; (ii) How would the 3.87 V be displayed on a 10V range? (ii) How would 0.7572 be displayed on 1V and 10V ranges? (05 Marks)
- c. List out general specification of a DVM. (05 Marks)
- 3 a. Explain the working of dual trace oscilloscope with block diagram and waveform. (10 Marks)
- b. Explain the working of electronic switch with the help of block diagram. (06 Marks)
- c. Explain the operation of triggered sweep in CRO. (04 Marks)
- 4 a. Explain the working of digital storage oscilloscope (DSO) with the help of block diagram. (10 Marks)
- b. Sketch the diagram to show the construction of a variable persistence storage CRT. Explain its operation. (10 Marks)

PART – B

- 5 a. Explain the working of square wave and pulse generator with the help of neat block diagram. (10 Marks)
- b. Draw and explain the frequency synthesizer with the help of block diagram. (10 Marks)

- 6 a. Derive an expression for bridge sensitivity for Wheatstone bridge under small unbalance conditions. (10 Marks)
- b. Calculate the current through the galvanometer for the bridge shown in fig.Q6(b). (06 Marks)
- c. Write a note on wagner ground connection. (04 Marks)

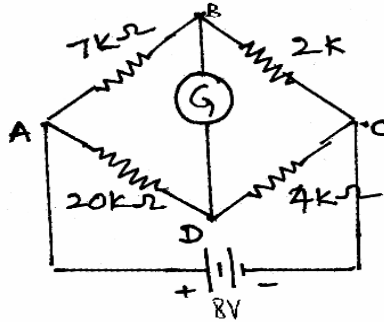


Fig.Q6(b)

- 7 a. What are active and passive transducers? Write its classification in each type. (06 Marks)
- b. List the advantages of electrical transducers. (04 Marks)
- c. Explain the working of variable differential transformer transducers. (10 Marks)
- 8 a. Write a note on photomultiplier tube. (06 Marks)
- b. Explain the constructional detail and working of LCD. (08 Marks)
- c. Explain the working of liquid vapour display (LVD) with diagram. (06 Marks)

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