2006 Scheme

USN | | | | | | | | | | |

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) Randam errors; (iii) Accuracy and precision. **(06 Marks)**

b. Explain the working of a RMS responding voltmeter with the help of a suitable black 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 kΩ/V sensitivity and it is connected across R_h. **(07 Marks)**

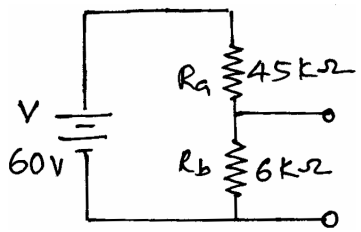

Fig.Q1(c)

2 a. Explain the black diagram of successive approximation type DVM. **(10 Marks)**

b. (i) Determine the resolution of a 4 $^1/_2$ 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)**

Important Note : 1. On completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages.
2. Any revealing of identification, appeal to evaluator and /or equations written eg, 42+8 = 50, will be treated as malpractice.

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 wagnor ground connection. **(04 Marks)**

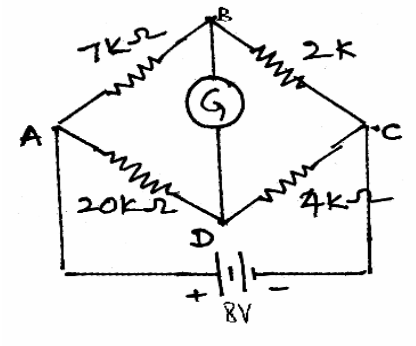

Fig.Q6(b)

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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