A1192

Examination May-2014

Roll No.....

B.Tech.(ECE)(4th Sem)

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Electronics Measurements and Instrumentation

Subject Code: BTEC 404

Time: 3hrs

Maximum Marks: 60

Instructions to Candidates:

1) Section A is compulsory consisting of Ten questions carrying Two marks each.
2) Section B contains Five questions carrying Five marks each and students has to attempt any Four questions.
3) Section C contains Three questions carrying Ten marks each and students has to attempt any two questions.

Section A

Q 1)

a. Differentiate the international standards and Absolute standards.
b. State three major categories of error.
c. What is loading effect.
d. What is the difference between the principle of operation of Maxwell bridge and Maxwell wein bridge.
e. How are broad band sweep frequencies generated using a sweep generator.
f. What is the difference between the wave analyzer and a harmonic distortion analyzer.
g. List five physical quantities that transducer measures.
h. Define LVDT.
i. What is a data acquisition system?
j. State any two applications of telemetry.

Section B

Q 2) Explain the method of data transmission with the help of a suitable example

Q 3) What is the difference between the photo-emissive, photo-conductive and photo-voltaic transducers?

Q 4) An ac LVDT has the following data: Input=6.3 V,Output=5.2V,range ±0.5 in. Calculate the output voltage vs core position for a core movement going from +0.45 in. to -0.30 in. Determine the ouput voltage when the core is -0.25 in. from the centre.

Q 5) How does the basic circuit of Kelvin's bridge differ from that of Wheatstone bridge. Explain their applications.

Q 6) Draw the basic block diagram of an oscilloscope and explain the function of each block.

Section C

Q 7) Explain the principle of successive approximations type DVMs. what is the advantage of a SAR type DVM over other types of DVM.

Q 8) Explain the different methods used for producing records. What are the basic components of a Magnetic recorder? Explain its operation.

Q 9) a. What two conditions must be satisfied to make an bridge balance?

b. A Maxwell bridge is used to measure an inductive impedance. The bridge constants at balance are C_1= 0.01μF, R_1=470kΩ, R_2 = 5.1kΩ, and R_3= 100 kΩ. Find the series equivalent of the unknown impedance.

End