Roll No. ....

Total No. of Questions : 09]   [Total No. of Pages : 02

B.Tech. (Sem. - 3rd)

ELECTRONIC MEASUREMENT AND INSTRUMENTATION

SUBJECT CODE : EC - 203

Paper ID : [A0302]

[Note : Please fill subject code and paper ID on OMR]

Time : 03 Hours   Maximum Marks : 60

Instruction to Candidates:

1)   Section - A is **Compulsory.**

2)   Attempt any **Four** questions from Section - B.

3)   Attempt any **Two** questions from Section - C.

Section - A

Q1)   *(10 x 2 = 20)*

a)   Name different types of frequency meters.

b)   Write different methods of measurement of medium resistance.

c)   What is meant by drift?

d)   Define transformation ratio of a current transformer.

e)   Explain Ration Correction Factor (RCF).

f)   Why LVDT are used in measurement?

g)   How will you differentiate 7 segment displays with 14 segment display?

h)   What is the role of recorders in measurement system?

i)   What is the working principle of photoelectric transducer?

j)   Why do we use strip chart recorders?

Section - B

Q2) Explain working principle of Weston Frequency meter.

Q3) Discuss Substitution method for measurement of medium resistance.

Q4) Write advantages of instrument transformers.

Q5) Discuss working principle of LVDT.

Q6) Discuss characteristics of current transformer.

Section - C

(2 x 10 = 20)

Q7) A resistance of approximate value of 80 ohm is to be measured by voltmeter-ammeter method using a 1A ammeter having a resistance of 2 ohm and a 50V voltmeter having a resistance of 5000 ohm. (a) Suggest which one of the two methods should be used? (b) Supposing in the suggested method the following measurements are made: $I = 0.42A$ and $V = 35.5V$, what is the resulting error if the accuracy of the instrument is $\pm 0.5\%$ at full scale and the errors are standard deviations?

Q8) Explain the principle of Signal generator with suitable diagram.

Q9) Write short note on (i) LCR meter (ii) methods of data transmission.