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Roll No. | | | | | | | | | | | | | Total No. of Pages : 02

Total No. of Questions : 09

B. Tech. (EE) PT (Sem.–2)

ELECTRICAL MEASUREMENTS & INSTRUMENTS

Subject Code : BTEE-303

Paper ID : [A2625]

Time : 3 Hrs. Max. Marks : 60

INSTRUCTIONS TO CANDIDATES :

1. SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.
2. SECTION - B & C. have FOUR questions each.
3. Attempt any FIVE questions from SECTION B & C carrying EIGHT marks each.
4. Select atleast TWO questions from SECTION - B & C.

SECTION-A

1 Answer briefly :

a What is T/W ratio? Discuss.

b What is damping torque? Explain.

c What do you mean by systematic errors? Explain.

d List the advantages of induction type instruments.

e What is the need of potentiometer? Explain.

f What do you mean by BH curve? Explain.

g Differentiate C.T. and P.T.

h List the characteristics of Hay's bridge.

i What do you mean by sensitivity? Explain.

j Discuss the use of shunts and multipliers.

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SECTION-B

2 Describe the construction and characteristics of primary standards of EMF.

3 Describe the construction and working of PMMC instrument. Derive the equation for deflection if the instrument is spring controlled. Describe the method of damping used in these instruments.

4 Describe the basic principle of operation of a d.c. potentiometer. Explain why a potentiometer does not load the voltage source whose voltage is being determined.

5 Describe how high currents and voltages are measured with the help of instrument transformers. Support your answer with suitable diagrams, if required. Also write down its advantages.

SECTION-C

6 Explain how Wein Bridge can be used for experimental determination of frequency. Derive the expression for frequency in terms of bridge parameters.

7 Discuss the following

a Self-balancing Potentiometers

b Kelvin Double bridge

8 a Describe the Lloyd Fisher square for measurement of iron losses in a specimen of laminations. Also list its advantages.

b What are parameters? Explain the working of a Hopkinson Parameter.

9 Explain the following :

a Dynamometer

b Standards of inductance

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