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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.

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