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Total No. of Pages : 02

Total No. of Questions : 09

B. Tech. (EE) PT (Sem.-2)

ELECTRICAL MEASUREMENT & INSTRUMENTS

Subject Code : BTEE-303

M.Code : 71536

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**Q1. Answer briefly :**

- a) State the advantage of AC potentiometers.
- b) List SI units of at least six parameters.
- c) What are active and passive bridge circuits?
- d) What are leakage current effects?
- e) What is electromagnetic interference in instruments?
- f) How the current transformer and potential transformer are connected in a circuit?
- g) How the range of instrument can be extended in PMMC instruments?
- h) State the advantages of Dynamometer type instruments.
- i) What do you meant by hysteresis?
- j) What is electromagnetic interference in instruments?



SECTION-B

- Q2. Describe the circuit of Maxwell bridge used for measurement of inductance. Derive the conditions for balance.
- Q3. Give the construction and principle of operation of potential transformer.
- Q4. Describe the construction and working of PMMC instrument. Derive the equation for deflection if the instruments are spring controlled.
- Q5. Describe the step by step method for determination of BH curve of a magnetic material.

SECTION-C

- Q6. Describe with help of suitable diagrams. How a DC potentiometer can be used for calibration of voltmeter, Ammeter and wattmeter?
- Q7. a) Discuss the ratio and phase angle errors in CT and PT, how they can be minimized.
b) Discuss the advantages and limitations of electromagnetic interference in measurements.
- Q8. a) Describe the construction and functioning of self balancing potentiometer.
b) Explain with neat circuit diagram the working of successive approximation type self-balancing potentiometer.
- Q9. Write short note on followings :
- a) Dynamometer
- b) Hays Bridge

NOTE : Disclosure of Identity by writing Mobile No. or Making of passing request on any page of Answer Sheet will lead to UMC against the Student.