SHAHEED BHAGAT SINGH STATE TECHNICAL CAMPUS, FEROZEPUR

ROLL No: | | | | | | | | | | | | |

Total number of questions: 06 **Total number of pages:[2]**

B.Tech. || EE || 3rd Sem

Electrical Measurements & Instrumentation

Subject Code: BTEE-303

Paper ID:

Time allowed: 3 Hrs **Max Marks: 60**

Important Instructions:

- **All questions are compulsory**
- **Assume any missing data**

PART A (2×10)

All Cos

Q. 1. Short-Answer Questions:

(a) What are the different standards to represent EMF?
(b) Give limitations of PMMC instruments.
(c) What do you understand by air damping and eddy current damping?
(d) What are the advantages of instrument transformer over ammeter shunts and voltmeter multipliers?
(e) Mention salient features of self balancing potentiometers.
(f) What is meant by systematic errors?
(g) Comparison between Analog and Digital instruments.
(h) Derive the null condition of a d.c. bridge.
(i) What is the principle of working of flux meter?
(j) Give salient features of instrument transformers.
(k) Define burden in instrument transformers.

PART B (8×5)

Q. 2. Describe working of Hay's bridge-:-Why is this bridge suited for measurement of inductance of high Q coils? CO4

OR

Explain the Lloyd Fisher square for measurement of iron loss in a specimen of laminations. CO4

Q. 3. Derive the equations for balance in the case of Maxwell's inductance - capacitance bridge. Draw the phasor-diagram for balance condition. CO3

OR

What are the essential characteristics of energy meter? Explain the working principle and give the advantages of Induction type watt hour meter. CO3

Q. 4. Explain the circuit of a multimeter for measurement of AC voltages. CO2

OR

Discuss the procedure of standardization of a DC potentiometer CO2

Q. 5. What are the sources of error in instrument transformers? Draw the equivalent circuit and phasor diagram of a potential transformer. CO2

OR

Discuss the working and constructional detail of dynamometer type instruments. CO2

Q. 6. Write a short note on following: CO1

a) Wheat stone bridge
b) Self balancing potentiometer

OR

Write a short note on following: CO1

a) Current transformer.
b) Polar type AC potentiometer