Register No.:

377

October 2023

Time – Three hours
(Maximum Marks: 100)

[N.B. 1. Answer all questions under Part-A. Each question carries 3 marks.

2. Answer all the questions either (A) or (B) in Part-B. Each question carries 14 marks.]

PART – A

1. State Ohm's law.
2. Find the voltage if R1=2 kΩ, R2=4 kΩ, I=20mA when the resistors are connected in parallel.
3. What is resonance frequency?
4. Write the condition for series resonance.
5. What are the losses in transformer?
6. What is the function of single-phase induction motor?
7. Expand CRT and CRO.
8. What is loadcell?
9. What is deflecting torque in PMMC instrument?
10. Write short notes on voltage sensitivity.

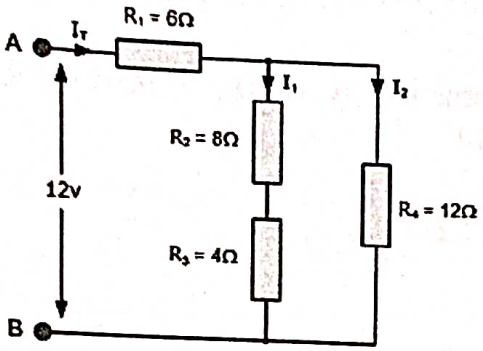
[Turn over.....

PART – B

11. (a) Explain superposition theorem with example.

(Or)

(b) Calculate the equivalent resistance, voltage across 12Ω resistor, total current I_T, I_1 and I_2 for the circuit given below.



12. (a) Analyze (i) RL series circuit, (ii) RC series circuit.

(Or)

(b) A 50Ω resistor is connected in series with a 10μF capacitor across a 200V, 50HZ AC supply. Find Capacitive reactance, Impedance, Current, Voltage drop across resistance, Voltage drop across Capacitance.

13. (a) Explain OC test on transformer.

(Or)

(b) Explain the operation of stepper motor.

14. (a) Explain the construction of LVDT.

(Or)

(b) Draw the block diagram of DSO. Explain.

15. (a) Explain the construction and working principle of PMMC instrument with neat sketches.

(Or)

(b) Explain the working principle of Schering bridge.
