806

April 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. Define power. What is the unit of power?

2. Find the current if R1=10 kΩ, R2=1 kΩ, R3=2 kΩ, Voltage=10 V when the resistors are connected in series.

3. Define RMS value in AC circuit.

4. Define bandwidth.

5. What is the function of three phase induction motor?

6. Write the principle of transformer.

7. What are the disadvantages of strain gauge?

8. Differentiate single trace CRO and dual trace CRO.

9. Define resolution.

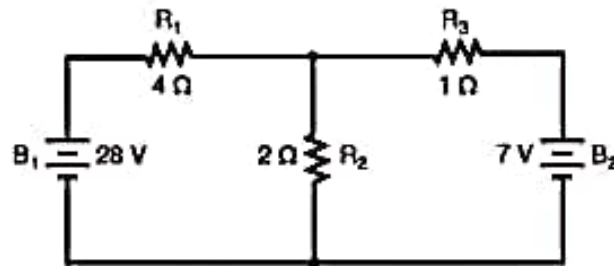10. What are the errors in measurement?

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PART – B

11 A) Explain maximum power transfer theorem with example.

(OR)

B) Find the current through 2Ω resistor using mesh method.

12 A) A 5KΩ resistor is connected in series with an inductance of 50mH across a 230V, 50Hz AC Supply. Find Inductive reactance, Impedance, Current, Voltage drops across resistance.

(OR)

B) Derive the expression for resonant frequency, bandwidth and Q-factor for parallel R-L-C circuit.

13 A) With a neat circuit diagram explain the construction and principle of operation of DC Generator.

(OR)

B) Explain SC test on transformer.

14 A) Explain the construction of strain gauge.

(OR)

B) Explain the working principle of function generator.

15 A) Explain how inductance is measured by using Maxwell's bridge.

(OR)

B) Explain the working principle of thermistor.