

ES103
[ET]

Enrol. No. A00916527004

END SEMESTER EXAMINATIONS NOVEMBER –
DECEMBER 2024

BASIC ELECTRICAL ENGINEERING

Time : 3 Hrs.

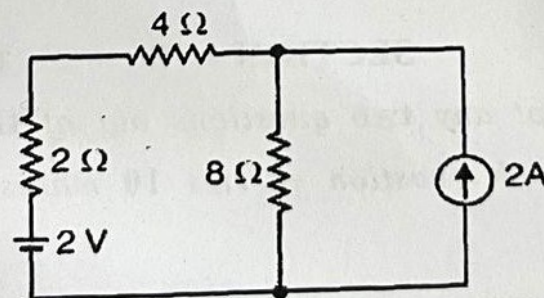
Maximum Marks : 60

Note: *Attempt questions from all sections as directed.
Use of Scientific calculator is allowed.*

SECTION – A (24 Marks)

*Attempt any **four** questions out of **five**.
Each question carries **06** marks.*

- 1. Use nodal analysis to find the voltage across and current through $4\ \Omega$ resistor in Fig below



P.T.O.

- 2. A resistance of 15 ohm is connected in series with a pure inductance of 0.01 H and capacitance of 50 micro Farad to a 100 V, 50 Hz supply. Calculate
 - (i) impedance
 - (ii) current and
 - (iii) power absorbed
 - (iv) phasor diagram.
- 3. Classify the electrical measuring instruments based on their working principle with suitable example.
- 4. Derive the voltages and currents relationship for star connected system.
- 5. Discuss principle and operation of transformer with its emf equation.

SECTION – B (20 Marks)

Attempt any two questions out of three.

Each question carries 10 marks.

- 6. Discuss series resonance and derive the expression for resonant frequency.

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7. With the help of neat connection diagram explain how power is measured in three phase circuit using two wattmeters method.
- 8. Draw and explain the construction parts of a DC machine. Also provide classification of dc motor alongwith circuits.

SECTION – C**(16 Marks)***(Compulsory)*

9. (a) State and explain Superposition theorem with one example. (10)
- (b) With the help of neat diagram explain construction and working of PMMC instruments. (6)