C16-**EE-303**

6239

BOARD DIPLOMA EXAMINATIONS

SEPTEMBER/OCTOBER - 2020

DEEE– THIRD SEMESTER

ELECTRICAL CIRCUITS

Time: 3 hours Max. Marks: 80

PART – A **3 X 10 = 30**

Instructions: *1. Answer **all** questions.*
*2. Each question carries **Three** Marks.*
3. Answer should be brief and straight to the point and should not exceed five simple sentences.

1. List any three methods for measurement of Medium Resistance.
2. Define Active and Passive circuits.
3. State the transformation formulae for star-delta circuit and vice versa.
4. State Superposition Theorem.
5. State the relation between Poles, speed and Frequency.
6. Define Resonance in a series circuit.
7. Define the terms Resistance and capacitance.
8. State the condition for parallel resonance.
9. Draw the Vector Diagram of the EMF'S of a Star Connected circuit.
10. State the relation between line, phase values of voltage and current in a 3 Phase Dellta circuit.

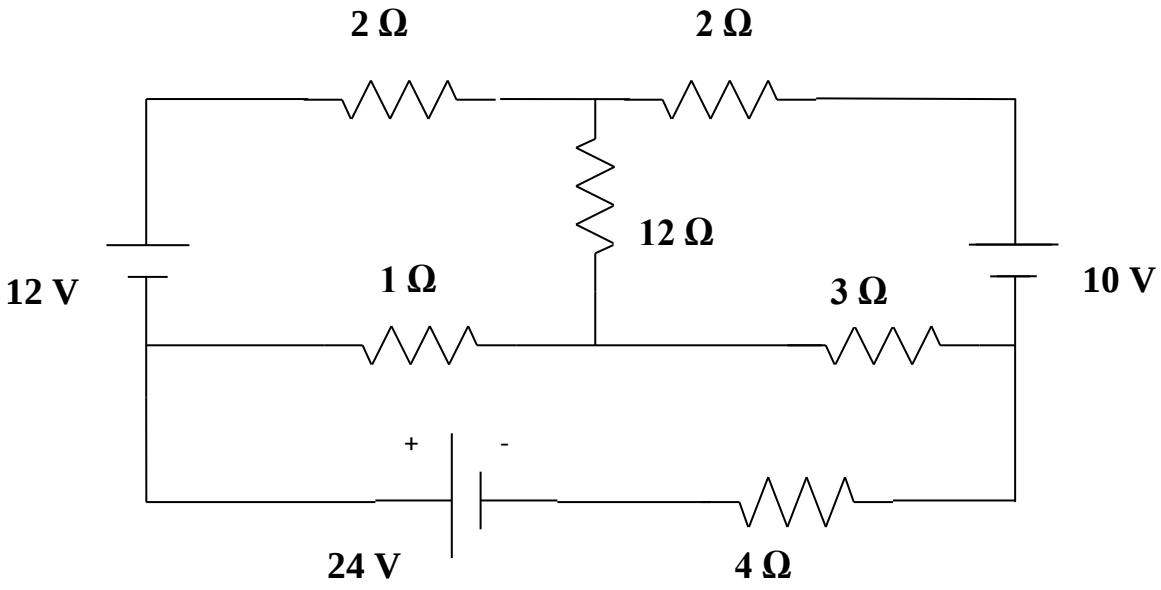
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PART – B 5 X 10 = 50

Instructions: *1. Answer any **Five** questions*
*2. Each question carries **TEN** Marks.*
3. Answer should be comprehensive and a criterion for valuation is the content but not the length of the answer.

11. Explain the method of measurement of earth resistance using earth megger.

12. Determine the current in 4 ohm branch in the circuit using Kirchhoff's Voltage Law.



13. a) Explain Ideal voltage source and Ideal current source.
b) Explain the method of generation of 2 phases EMF.

14. Determine a) Frequency b) RMS value
c) Average value d) Form factor
e) Peak factor of an alternating voltage V = 200 sin 47l t.

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15. Derive relationship between voltage and current in a pure capacitive circuit. Also obtain an expression for power.

16. A pure inductive coil is connected in series with a 12 Ω resistor to a 50 Hz source. The voltage across the resistor and inductor are 40 V and 60V respectively. Find value of inductance of coil, supply voltage and power factor of the circuit.

17. A circuit of (6+j8) Ω is connected in parallel with another Circuit of (6 +j8) Ω. This is connected across 220 V, 50 Hz supply.
Find a) Total current
b) Total power drawn by the circuit. Also draw the vector diagram.

18. Derive the formulae for measurement of 3 phase power by using two watt meters.