



DEE 301

III Semester Diploma in Electrical Engineering Examination, August 2011
CIRCUIT THEORY

Time : 3 Hours

Max. Marks : 75

*Instructions: All the questions are **compulsory**. Clearly mark Question Number, Part **A** and Part **B** in the Answer Sheet while attempting the questions.*

PART – A

(1×15=15)

1. Draw the circuit diagram of series connection of resistors.
2. Define the term voltage source.
3. Draw the circuit for resistors connected in parallel.
4. Define the term of current source.
5. Define potential difference.
6. State Ohm's laws.
7. What is Kirchhoff's laws ?
8. State super position theorem.
9. What do you mean by star delta transformation ?
10. Draw the circuit diagram of series R-L-C circuit.
11. What is impedance ?
12. Draw series R-L circuit.
13. Write the formula of impedance for series R-C circuit.
14. State Norton's theorem.
15. Write the unit of electrical power.

P.T.O.



PART – B

(5×12=60)

16. Derive the expression of current for series R-L-C circuit.

OR

Derive the expression of total capacitance of the capacitors when they are connected in series and parallel.

17. If the three resistors of 40 ohm, 50 ohm and 30 ohm are connected in series with 12 v D.C supply, find the current and branch voltages.

OR

If the three resistors of 40 ohm, 50 ohm and 30 ohm are connected in parallel with 12 v D.C supply, find the main current and branch currents.

18. If the resistance, inductance and capacitance of 200 ohm, 5 H and 40 micro farad respectively are connected in series, find current and impedance.

OR

State and prove super position theorem.

19. State and explain Thevinin's theorem.

OR

Distinguish between R-L and R-C parallel circuits.

20. Describe the suitable examples of star-delta conversion.

OR

State and prove maximum power transfer theorem.
