Reg.No.:								

VIVEKANANDHA COLLEGE OF ENGINEERING FOR WOMEN
[AUTONOMOUS INSTITUTION AFFILIATED TO ANNA UNIVERSITY, CHENNAI]
Elayampalayam – 637 205, Tiruchengode, Namakkal Dt., Tamil Nadu

Question Paper Code: 8001

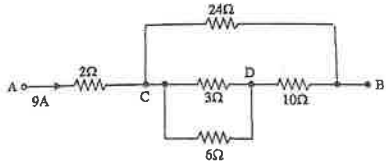
B.E. / B.Tech. DEGREE SUPPLEMENTARY EXAMINATIONS – FEB. / MAR. 2020
Third Semester
Computer Science and Engineering
U15EE309 - INTRODUCTION TO ELECTRICAL AND ELECTRONICS CIRCUITS
(Common to Information Technology)
(Regulation 2015)

Time : Three Hours Maximum : 100 Marks

Answer ALL the questions

PART – A (10 x 2 = 20 Marks)

1. Determine the effective resistance between terminals A & B in the given circuit.

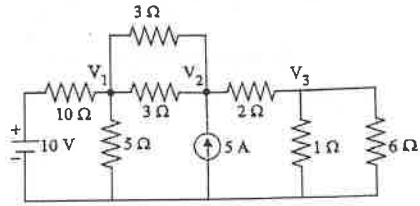


2. State Thevenin's theorem.
3. Write the expression for transient current for series RL and RC circuits.
4. Define Q-factor.
5. Demonstrate the Mass-action law.
6. Compare Avalanche breakdown and Zener breakdown.
7. Differ FET with MOSFET.
8. Write a short note about n channel JFET.
9. List some application of DIAC.
10. What is meant by Tunnel diode?

PART – B

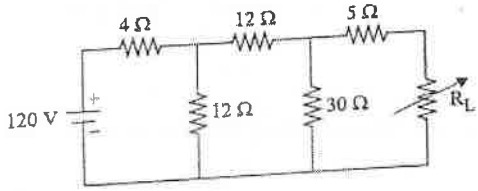
(5 x 13 = 65 Marks)

11. a) Determine the voltages at each node for the given circuit.

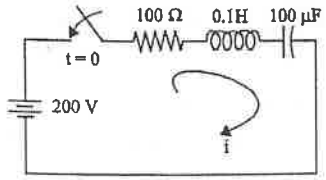


(OR)

b) Find the load resistance for maximum power across it as shown in fig. What is the maximum power?



12. a) A series RLC circuit with R = 100 Ω, L = 0.1 H and C = 100 μF has a DC voltage of 200 V applied to it at t = 0 through a switch. Find the expression for the transient current. Assume initially relaxed circuit conditions.



(OR)

b) Construct an expression for the transient current of RC circuit with DC excitation.

13. a) Explain the V-I characteristics and Energy band structure of P-N Junction diode with a neat sketch.

(OR)

b) Elaborate the concept of Zener diode and its characteristics with neat sketches.

14. a) Construct the working principle of MOSFET with a neat sketch.

(OR)

b) Build the input and output characteristics of a transistor in CC configuration with a neat sketch.

15. a) Explain in detail about DIAC and TRIAC with neat sketches.

(OR)

b) Explain in detail about PIN diode with a neat sketch.

PART – C

(1 x 15 = 15 Marks)

16. a) Construct an expression for Star to Delta and Delta to Star in DC circuits.

(OR)

b) Elaborate the two transistor model of SCR with a neat sketch.