

APRIL / MAY - 2014

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B.E. / B.Tech (Full Time) DEGREE END SEMESTER EXAMINATION, APRIL / MAY 2014
INFORMATION TECHNOLOGY
SECOND SEMESTER

EC194 / EC9161- ELECTRONIC DEVICES & CIRCUITS

(Regulations 2004 / 2008)

Time: 3 Hours

Answer ALL questions

Max. marks: 100

PART-A

(10X2=20 marks)

1. Use Kirchoff's voltage law, to find voltage across R_L in figure 1.
2. What is the equivalent resistance across AB in figure 2?
3. State Maximum Power Transfer Theorem.
4. What is meant by Phasor diagram.
5. List few applications of zener diode.
6. Draw the VI characteristics of JFET.
7. What is the effect of emitter capacitance in CE amplifier?
8. Draw the equivalent circuit of CS MOSFET amplifier.
9. Draw subtractor circuit using op-amp.
10. Relate input and output of differentiator using op-amp.

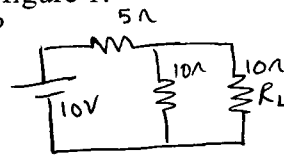


Figure 1



$R = 10k\Omega$
Figure 2

PART-B

(5X16=80 marks)

11. i. Explain the operation of digital to analog converter.
 ii. Write short notes on low pass and high pass filter using op-amp.
12. a. i. Find the resistance between A and B in the circuit given in figure 3.
 ii. In the circuit given in figure 4, find the current I_1 .

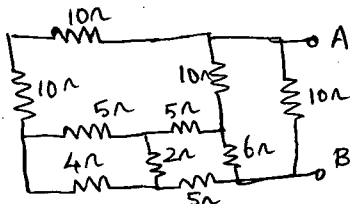
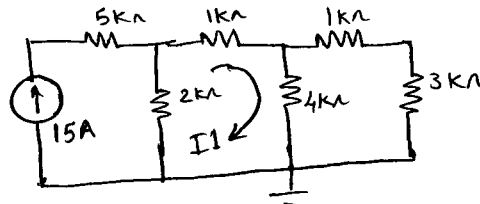


Figure 3



(or) Figure 4

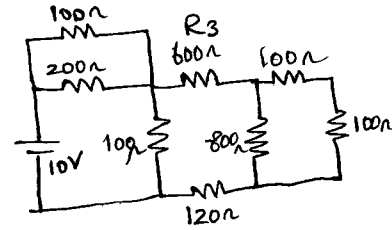


Figure 5

- b. i. For the circuit shown in figure 5. Find the voltage across R_3 .
 ii. For the circuit shown in figure 6, find the current through R_L .

13. a. i. State Thevenin's and Norton's theorem.

- ii. For the circuit shown in fig.7, find R_L for maximum power transfer.

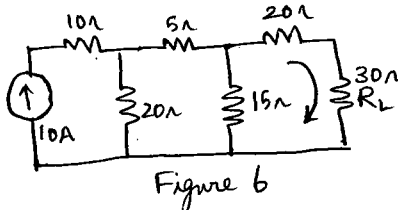


Figure 6

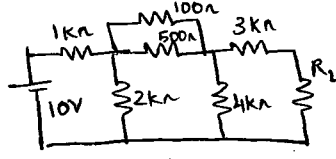


Fig. 7 (or)

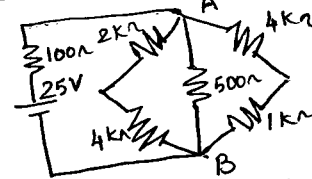


Figure 8

- b. i. Find the resistance across A and B in the circuit given in figure 8 using star-delta transformation.
 ii. Briefly explain about 3-phase circuits.

14. a. i. Derive drift and diffusion current of PN junction diode.
ii. Explain the operation of Zener diode voltage regulator.

(or)

- b. i. Draw and explain the drain characteristics of FET with its operating mode.
ii. Explain the drain characteristics of MOSFET.

15. a. Explain operation of full wave rectifier with capacitor filter.

(or)

- b. Explain the operation of CE amplifier with its equivalent circuit diagram.