

COLLEGE OF ENGINEERING GUINDY, ANNA UNIVERSITY

Degree : B.E

Regulations : R 2008

Branch: Information Technology

Semester : II

Subject Code No. / Subject Title : EC9161 – Electronic Devices and Circuits

Time: 3 Hours

Max.marks: 100

Answer ALL questions

PART-A

(10X2=20 marks)

1. State Kirchoff's current and voltage laws.
2. Find the voltage and current through R_1 in figure 1.

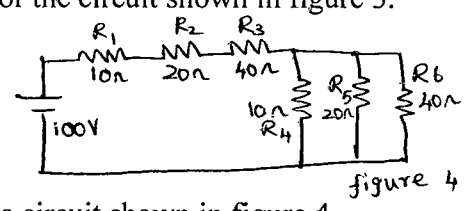
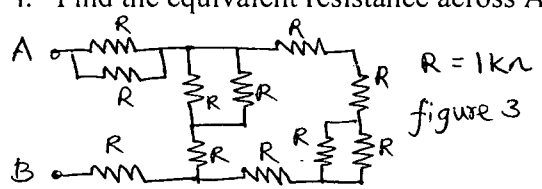


3. What is meant by linearity in electric circuits?
4. Define Maximum power transfer theorem.
5. Draw the VI characteristics of zener diode.
6. Distinguish between DMOS and EMOS.
7. What is the ripple factor of centre tapped full wave rectifier?
8. What are the conditions required to get sustained oscillations?
9. What are the ideal characteristics of operational amplifier?
10. Derive the input-output relationship of differentiator.

PART-B

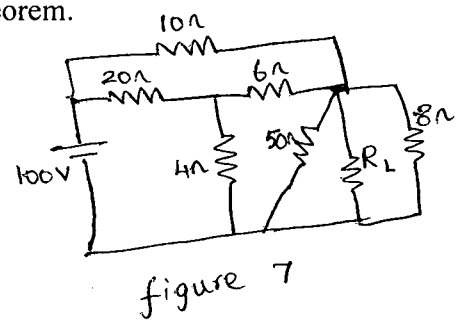
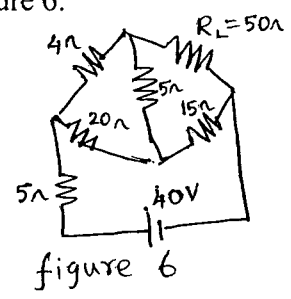
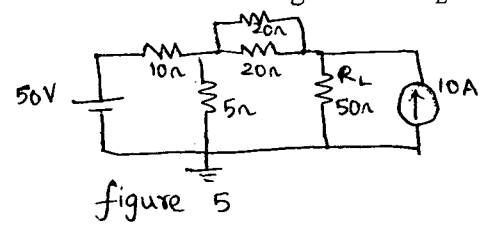
(5X16=80 marks)

11. a. i. Find the equivalent resistance across AB for the circuit shown in figure 3.



- ii. Explain voltage and current division for the circuit shown in figure 4.

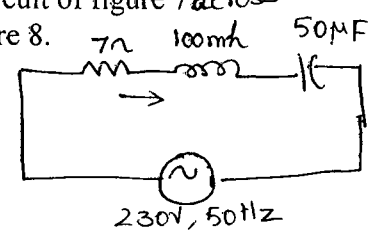
12. a. i. Find current through R_L in figure 5 using superposition theorem.
- ii. Find the voltage across R_L in figure 6.



(or)

- b. i. Find the Thevenin's and Norton's equivalent circuit of figure 7 across R_L .
- ii. Draw the phasor diagram for the circuit in figure 8.

figure 8



13. a. Derive drift and diffusion current of pn junction diode.
(or)
b. Derive current equation and draw VI characteristics of JFET.
14. a. Find the voltage gain, input and output resistance of common emitter amplifier with feedback.
(or)
b. Explain the operation of CS MOSFET amplifier.
15. a. Explain the application of op-amp as amplifier, subtractor and summing amplifier.
(or)
b i. Explain the operation of digital to analog converter.
ii. Derive the output for first order high pass filter.