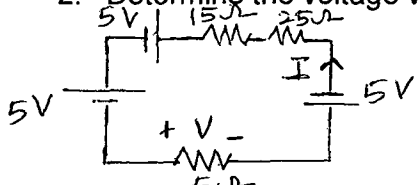
B.E. END SEMESTER EXAMINATIONS, APR / MAY 2011
III SEMESTER REGULATIONS 2008
EC 9213 ELECTRONIC DEVICES AND CIRCUITS

Time: 3 Hours **Max Mark : 100**

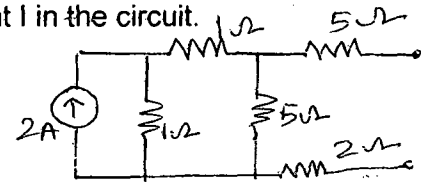
ANSWER ALL QUESTIONS

PART-A **(10X2=20 marks)**

1. If a resistor has 6 V across it and 5 mA flowing through it, what is the power.
2. Determine the voltage v and current I in the circuit.



(Q.2)

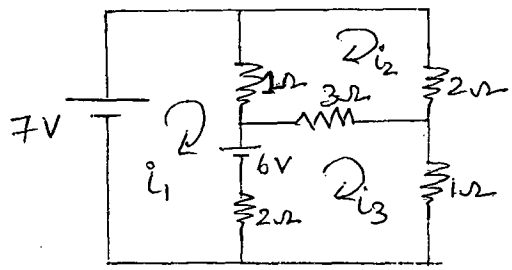


(Q.3)

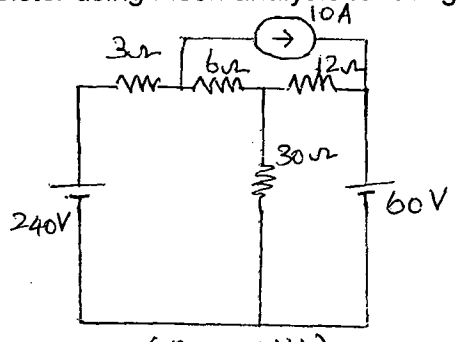
3. Determine the equivalent input resistance for the circuit shown.
4. State Norton's theorem.
5. What is load regulation of zener regulator.
6. Define transconductance of FET.
7. Define ripple factor of a rectifier.
8. What are the advantages of FET amplifier over BJT amplifier.
9. What are the ideal conditions of an operational amplifier.
10. Draw the frequency response of low pass and high pass filter.

PART-B **(5X16=80 marks)**

11 (i) Determine voltage drop across 3 Ω resistor using Mesh analysis for the given circuit.



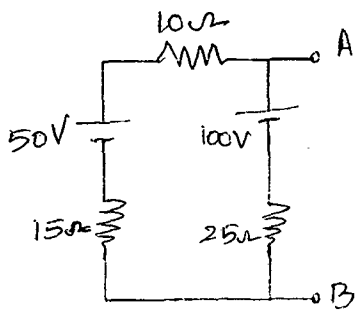
(Q.11.(i))



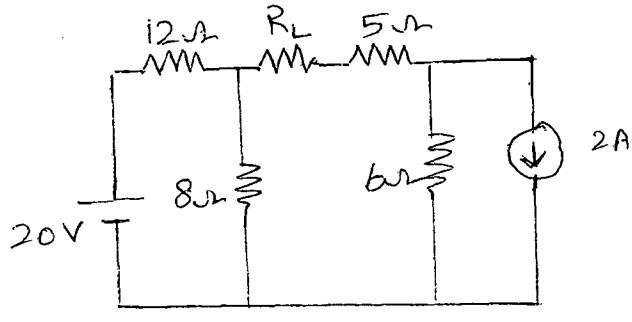
(Q.11.(ii))

(ii) Determine the power absorbed by the 6 Ω resistor using Nodal analysis.

12 a(i). Determine the Thevenin equivalent circuit at terminals AB of the network given.
(ii). What is the maximum power delivered to R_L in the given circuit.



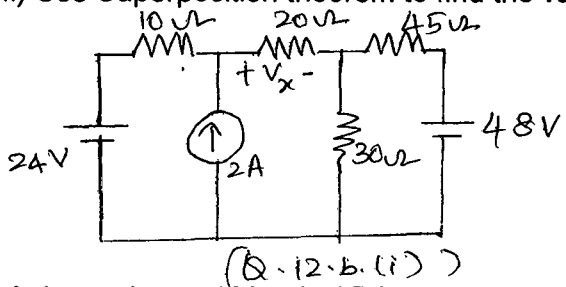
(Q.12.a.i)



(Q.12.a.(i))

OR

b.i) Use Superposition theorem to find the value of v_x in the given circuit.



(Q.12.b.(i))

ii). A three-phase, 100 volt, ABC system supplies a balanced delta connected load with impedances of 25 45° ohms. Determine the line currents and draw the phasor diagram.

13a(i) Explain the input and output characteristics of common emitter configuration of NPN transistor.

(ii) Explain in detail the volt-amp characteristics of PN junction diode.

OR

b(i) What is Zener effect. Explain Zener characteristics and its application as a regulator.

(ii) Explain the working and volt-amp characteristics of Enhancement MOSFET and Depletion MOSFET.

14a. Explain the working of CE amplifier with the appropriate waveforms at various nodes.

OR

b(i) Derive the average value, RMS value and ripple factor of fullwave rectifier with and without filter.

(ii) Describe the dc and ac analysis of common source amplifier.

15a. Explain the applications of an operational amplifier as three input noninverting summer, two input difference amplifier, differentiator and integrator.

OR

b Explain digital to analog conversion using R-2R ladder and weighted resistor D/A converter with an appropriate example.
