



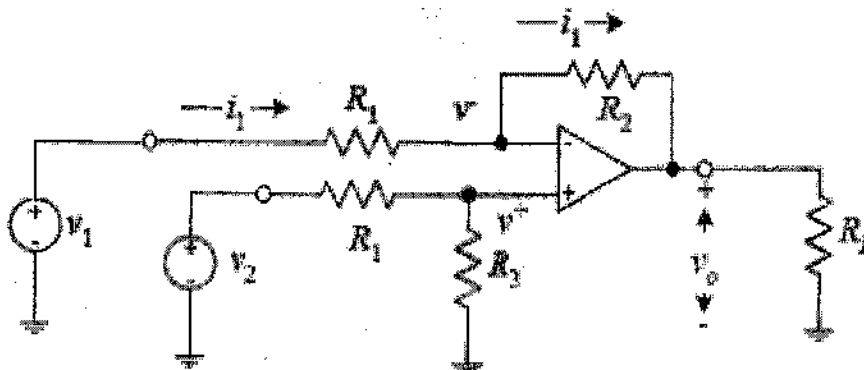
This exam measures ILOs no a.1, a.4, b.5, b.9, C.13 and C.14, d.8.

Question 1 (16) Degrees

- Sketch the circuit diagram of a simple d.c. power supply, identify the type of rectifier circuit represented in the circuit, and explain the operation of the circuit and the function of each component in it, then find the ripple factor. (8degrees)
- Explain the V-I characteristics of forward biased p-n junction diode. (4degrees)
- Basically there are two type of regulations. Explain them. (4degree)

Question 2 (14)degrees

- Find an expression for the output voltage in terms of the resistance and input voltages for the differential amplifier shown in Figure (4degrees)



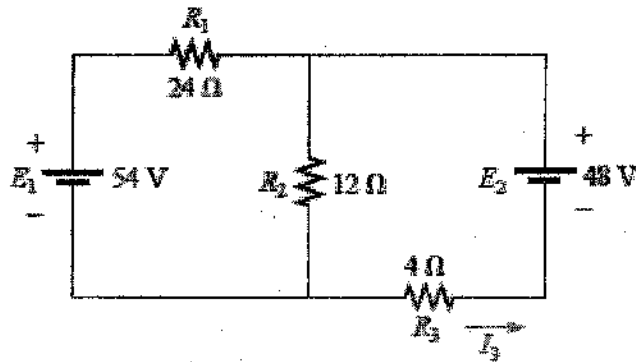
- Explain the structure of PNP transistor. Then explain how can get the common emitter configuration Characteristics in labolarity (5 degrees)
- Draw the circuit diagram of a triangle wave generator by using OP-AMP? (5 degrees)

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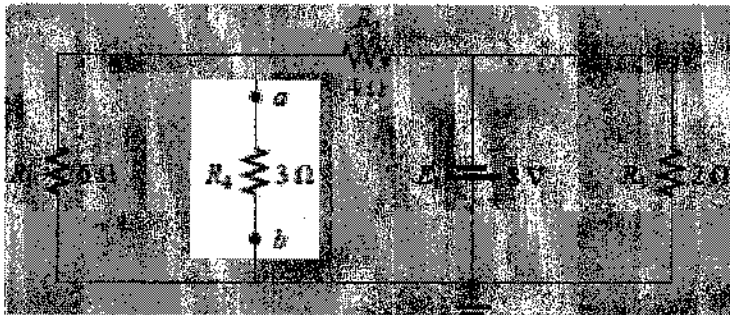
Question 3 (12)Degrees

Using superposition, determine the current through the 4-Ω resistor of the following Fig.



Question 4 (12)Degrees

Find the Thévenin equivalent circuit for the network in the shaded area of the network of the following Fig.



Question 5 (6)Degrees

- a. Determine the time constant of the circuit.
- b. Sketch the waveforms for v_C and i_C .

