Shahjalal University of Science & Technology
Department of Electrical & Electronic Engineering
1st year 2nd Semester Final Examination – December 2012
Course No: EEE 103B
Course Title: Introduction to Electrical and Electronic Circuits
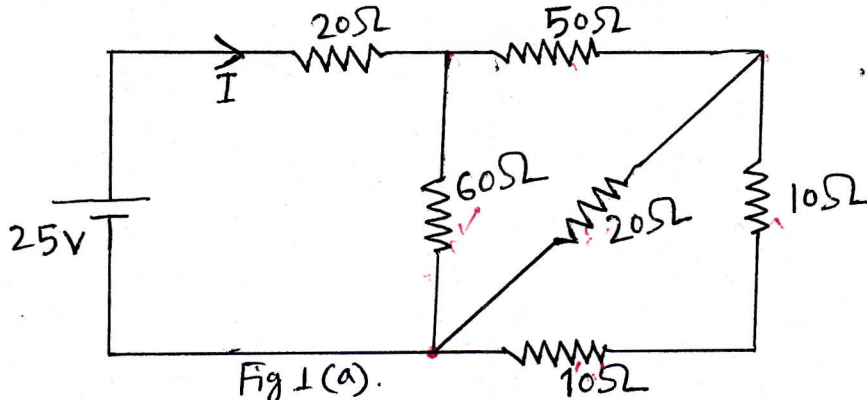Credits : 2.0   Full Marks : 50   Time : 2 Hours

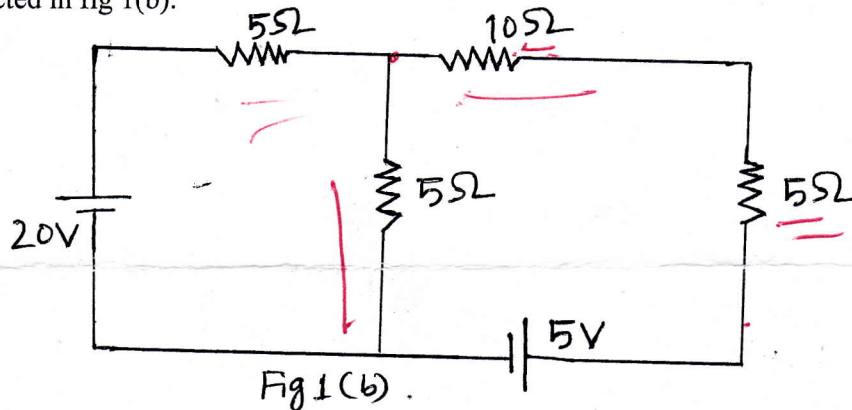*[Answer any four questions taking two from each group]*

Group A

Q1 (a) Find the value of current I of the circuit as shown in fig 1(a).   6
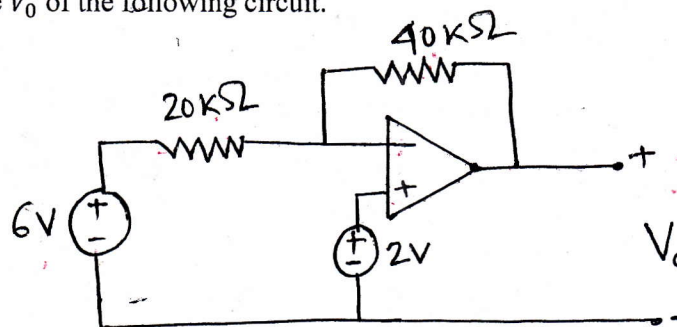

Fig 1 (a).

(b) Using KVL and KCL find the currents following through each resistor of the circuit   6.5
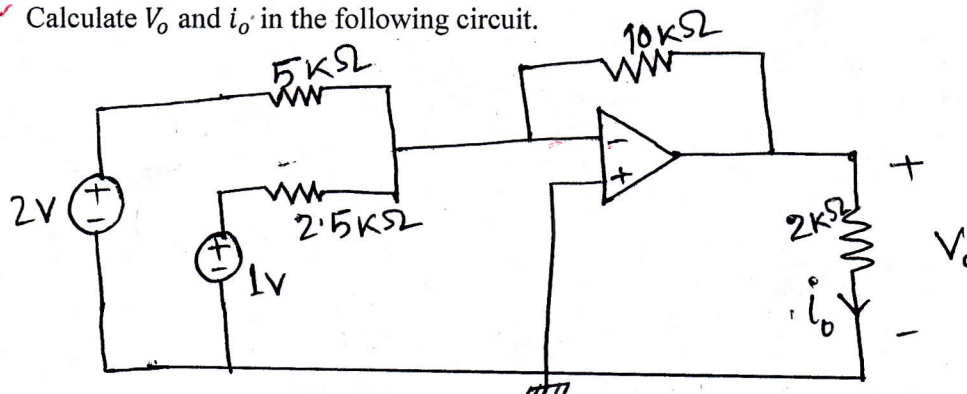depicted in fig 1(b).

Fig 1 (b).

Q2 (a) What is operational amplifier? Give the pin configuration of uA741.   2+2
(b) Determine V_0 of the following circuit.   4

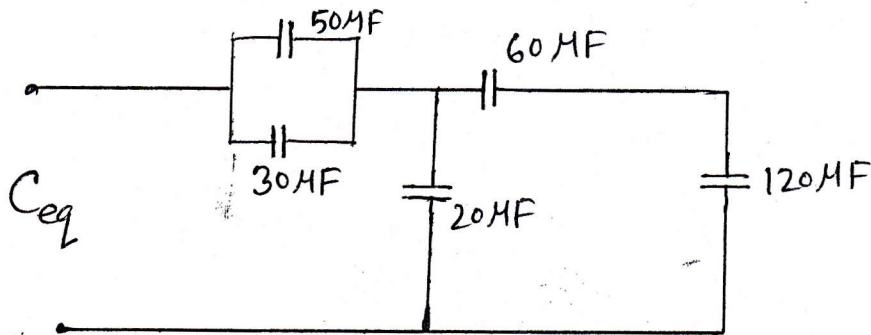Fig 2 (b)

(c) Calculate V_o and i_o in the following circuit.   4.5

Q3 (a) Give the symbols, logic expressions and truth table of fundamental logic gates.   6
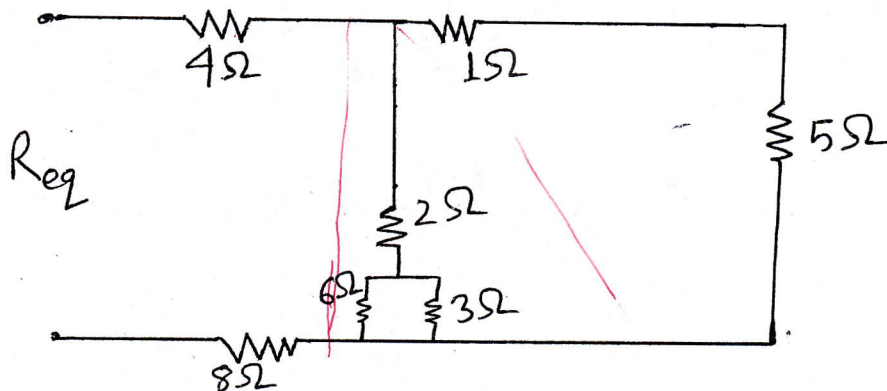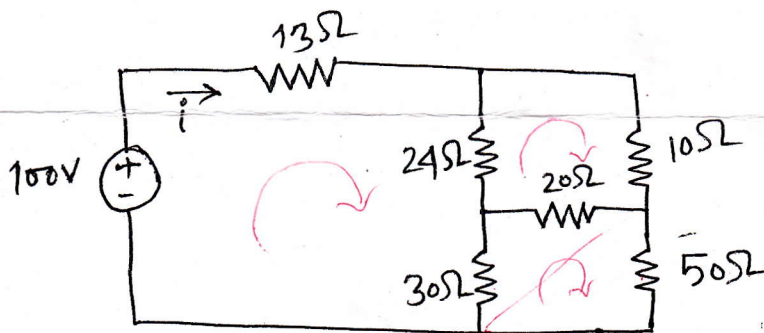
Group B

Q4 (a) State KVL and KCL.   2
     (b) Find the equivalent capacitance for the following network.   3

(c) Find R_{eq} for the following circuit.   3

(d) Find i in the following circuit.   4.5

Q5 (a) Give the definition and symbol of diode and transistor.   6
     (b) Derive the equation for energy stored by a capacitor.   6.5

Q6 (a) Explain the forward and reverse bias of a semiconductor diode.   6
     (b) Determine the current I, I_{D1} and I_{D2} of the following circuit.   6.5