University of Technology
Department of Applied Sciences
Final Examination 2014/2015

Subject : Electrical circuits | **Class : 2nd class**
Branch : Applied physics | **Time : 3 hours**
Examiner :Odai N Salman | **Date :**

Note: answer four questions only.

Q1: For the network in Fig. 1:

a. Determine the voltage V_{ab} *using* use Kirchhoff's voltage law.

b. Calculate the current I.

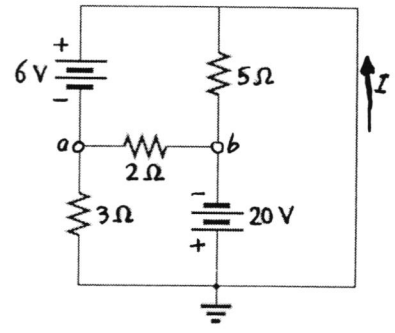

Fig.1

Q2: : Using the principle of superposition, find the current I_2 through the 12 kΩ resistor in Fig. 2.

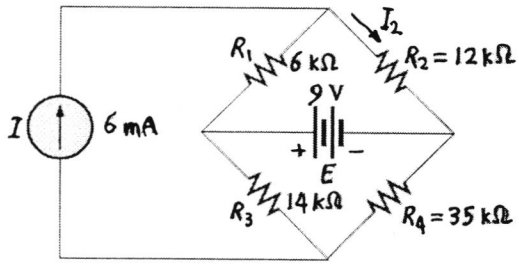

Fig.2

Q3: Find the Thévenin equivalent circuit for the network external to the resistor R in each of the networks in Fig. 3.

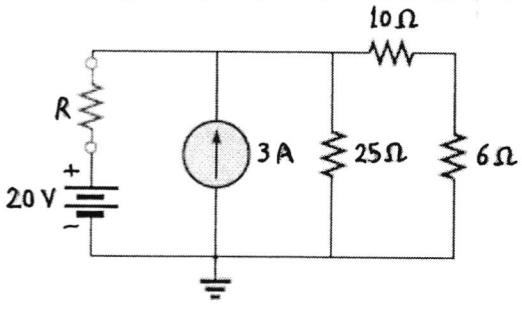

Fig.3

Q4: **a.** Determine the nodal Voltages for the network in Fig. 4.

b. Find the voltage across each current source.

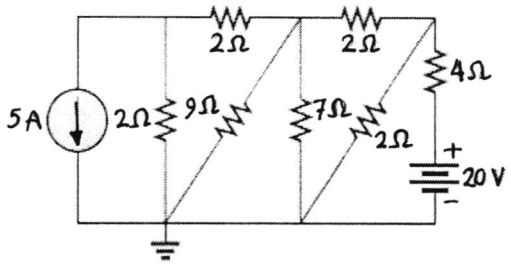

Fig.4

Q5: Using mesh analysis, determine the currents for the network in Fig.5

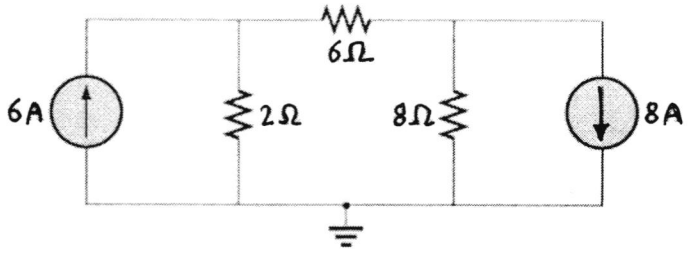

Fig.5