Benha University
Faculty of Engineering- Shoubra
Electrical Engineering Department
First Year Power

Final Term Exam
Date: 29/12/2014
Fundamentals of Electrical
Engineering
Duration : 3 hours

- Answer all the following question
- Illustrate your answers with sketches when necessary.
- The exam. Consists of two pages

- No. of questions : 4
- Total Mark: 100 Marks
- The first Page – 50 Marks

1.a) For the circuit shown in Fig. 1 , **Find** V1 and V2 .   **(8 marks)**

1.b) In Fig. 2 , use the Superposition Thereom to find the current I.   **(10 marks)**

1.c) For the circuit shown in Fig. 3, **Find**:   1- The value of RL to be connected
between a and b to obtain the maximum power dissipated in it   **(8 marks)**
2- The value of this maximum power   **(2 marks)**
3- The value of RL to obtain half of the maximum power .   **(2 marks)**

2) For the circuit shown in Fig. 4, **Find**:   **(20 marks)**
   1- The total impedance   2- The supply current   3- The current in R2
   4- The voltage across R2   5- The power factor   6- The total active
power, reactive power and apparent power   7- Draw the phasor, impedance
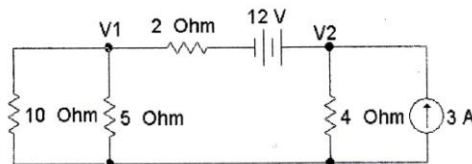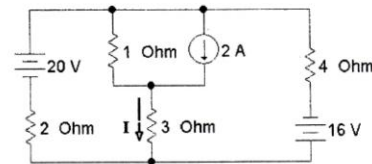and the power diagrams for the total eqivalent circuit

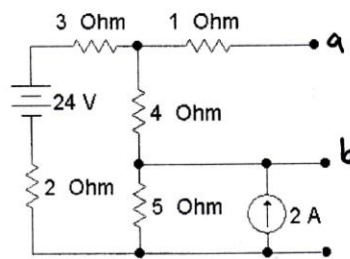**Fig. 1**

Fig. 2

Fig 3

Fig. 4

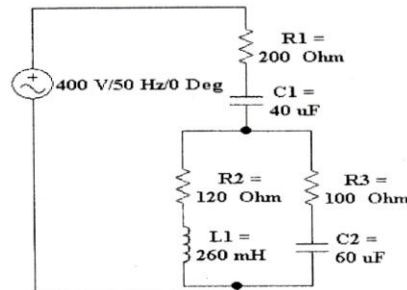Good Luck &   **Prof. Dr. M. Moenes**

Please Turn over the Page