

Higher Technology Institute
10th of Ramadan City
Mechanical Engineering Department (Mechatronics)

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| Subject: Principles of Electrical Engineering EE191 Group 61 Examiner: Dr. Moataz Elsherbini | Term 1st semester 2016/2017 Time : 60 min Total Marks : 30 |
| Midterm Exam (06/11/2016) | |

Answer the following questions:

Question (1): What is the total resistance between two diagonally opposite corners labeled A and H on the cube resistance shown in figure (1) if each resistance has a value of exactly 1 ohm? (5marks)

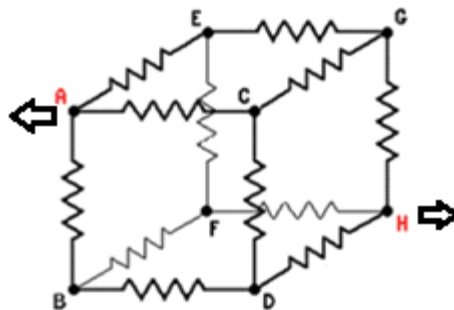


Figure (1)

Question (2): For the circuit shown in figure (3), find I_o using

- i. $\Delta \leftrightarrow Y$ transformation (7 Marks)
- ii. Node voltage analysis (9 Marks)
- iii. Mesh (loop Method) (9 Marks)

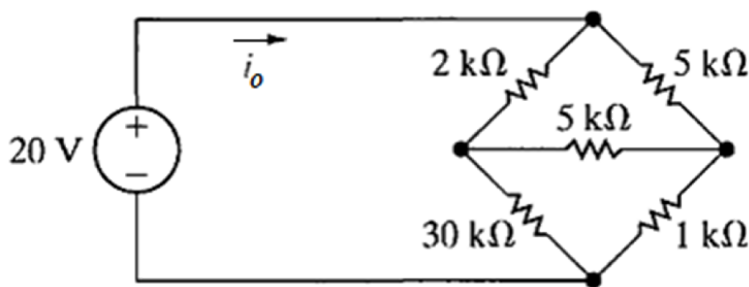


Figure (2)

You can only go as far as you push
Good Luck
Dr. Moataz Elsherbini