Menoufia University
Faculty of Engineering
Dept. of Electrical Engineering .
Date: 02/06/2018
Total Marks: 100

جامعة المنوفية

Final Term Exam
Academic Year: 2017-2018
Post graduate Master
Allowed Time: 3 Hours

Subject/Code: **Power Electronics Systems/ ELE 610**
This exam measures ILO's no. (A1, A3, A5, B1, B2, B3, C3, C4)
Remarks: No. of pages: 1 No. of questions: 4
Allowed Tables and Charts: (None)

Answer All The Following Questions:

The First Question (25 Marks)

1- Explain how to use Buck, Boost, and Buck Boost converter in power factor correction ?
2- Explain Switch Redundant Topology and its cases?
3- Mention steps of constructing a fuzzy controller ?
4- Define active power filter? Mention mainly two types? then mention advantages and disadvantages of active power filter?

The Second Question (25 Marks)

1- What factors are used for the comparison of fault tolerant power electronics converters ?
2- Mention the advantages and disadvantages of fuzzy logic controller?
3- What are the desirable features of a power factor correction techniques for both input and output sides ?
4- Mention effects of poor power quality on customer side and utility side?

The Third Question (25 Marks):

1- Mention power factor correction methods?
2- Explain concept of fault tolerance control? Mention different topologies which have been used to achieve fault tolerant?
3- Explain different types of passive power factor correction (PFC)? list advantages and disadvantages of passive power factor correction?
4- Discuss the influence of increasing / decreasing the number of membership ?

The Fourth Question (25 Marks)

5- What is the effect of harmonics on the power system?
6- Explain how to use FLC in series exited dc motor drives?
7- Explain concept of fault tolerance control of induction motor drive system with feed converter?
8- Define the power quality? then explain power quality problems, causes and effects of every problem?

With best wishes

Prof. Elwy E. El-kholy