Menoufiya University Faculty of Engineering Shebin El-Kom First semester examination



Year: Master

Department: Electrical Engineering Subject: Selected Topics in Electrical

Power and Machines

Date: 19-5-2018

Academic Year: 2017-2018

Question (1)

(25 Marks)

- (a) State briefly the types, advantages and disadvantages of both passive and active power factor correction circuits.
- (b) Discuss with the aid of diagrams the power factor correction circuit for three-phase induction motor.

Question (2) (25 Marks)

- (a) What are the power quality problems, and the causes of poor power quality.
- (b) Explain with help of diagram the types of active power filter.

Question (3) (25 Marks)

- (a) Sketch and explain the types of Flexible AC Transmission Systems (FACTS).
- (b) What is LED lamp? State its advantages and disadvantages. Show how the hysteresis current mode control is used in PFC for LED lamp.

Question (4) (25 Marks)

- (a) What is photovoltaic and how does it work. Mention the components of PV system.
- (b) Explain the different types of electrical wind systems. ------ Good Luck ------