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Question Paper Code: 52951

M.E. DEGREE EXAMINATION, DECEMBER 2015

Elective

Power Electronics and Drives

15PPE501 - POWER ELECTRONICS FOR PV AND WIND ENERGY SYSTEMS

(Regulation 2015)

Duration: Three hours

Maximum: 100 Marks

Answer ALL Questions

(5 x 20 = 100 Marks)

1. (a) Explain the qualitative study of the renewable energy sources. (20)

Or

(b) Explain the impacts of renewable energy generation on environment. (20)

2. (a) Write short notes on

(i) Types of PV power systems (4)

(ii) PV charge controllers (8)

(iii) Power conditioning unit for PV water pumping. (8)

Or

(b) Explain and classify the working of MPPT in a solar PV system. (20)

3. (a) Explain with an example how to control the harmonics and improve the power quality when solar PV is connected to the grid. (20)

Or

(b) Discuss the grid interactive inverters and their characteristics in detail. (20)

4. (a) Discuss the various power conditioning schemes used in WECS. (20)

Or

- (b) Give a detailed account of grid connected wind energy systems. (20)
5. (a) Explain the method to integrate hybrid solar PV and WECS to the grid with a neat block diagram. (20)

Or

- (b) Explain the modeling and simulation of a hybrid renewable power system with a suitable example. (20)
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