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**Reg. No. :**

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**Question Paper Code: 55010**

M.E. DEGREE EXAMINATION, NOV 2018

Elective

Power Electronics and Drives

15PPE510 - SOLAR AND ENERGY STORAGE SYSTEM

(Regulation 2015)

Duration: Three hours

Maximum: 100 Marks

Answer ALL Questions

PART - A (5 x 20 = 100 Marks)

1. (a) Explain the important aspects of solar cell design that affect efficiency and draw the cross-section of a typical commercial solar cell and also. CO1- U (20)

Or

- (b) Demonstrate the formation of a PN junction and explain the characteristics. CO1- U (20)

2. (a) Analyse the concept of self-regulation as applied to battery charging with solar cells. CO2- Ana (20)

Or

- (b) Inspect the components of power conditioning in PV system and also explain various regulators. CO2- Ana (20)

3. (a) Elaborate meaning of interconnected PV systems by the terms 'source circuit', 'parallel string', 'series block' and 'substring' using a diagram. CO3- C (20)

Or

- (b) Discuss the components in a grid connected residential photovoltaic system and discuss issues relevant to the use of photovoltaic in this application. CO3- C (20)

4. (a) Examine any one of the secondary or rechargeable battery technology. CO4- U (20)

Or

(b) Inspect in detail the impacts of intermittent generation in the context of cycling and emission. CO4- U (20)

5. (a) Identify the use of solar cells in telecommunication application. CO5- App (20)

Or

(b) Experiment with diagrams lab out direct-drive applications. CO5- App (20)

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