

**M. TECH.-III (ELECTRICAL -POWER SYSTEM) (CBCS – 2015
COURSE) : WINTER - 2017**

SUBJECT : SELF-STUDY PAPER – I: SOLAR PV & WIND ENERGY

Day : **Thursday**
Date : **25/01/2018**

W-2017-2955

Time : **11.00 AM TO 02.00 PM**
Max. Marks : 60

N.B.:

- 1) All questions are **COMPULSORY**.
- 2) Figures to the right indicate **FULL** marks.
- 3) Answers to both the sections should be written in **SEPARATE** answer books.

SECTION – I

Q.1 Explain the steps involved in developing the solar park. Also, explain the problems faced during the installation of solar park. [10]

OR

Explain with neat sketch various components of PV systems. Also, state the application of PV systems.

Q.2 Explain the various design prospect of solar photovoltaic system. Also explain the design parameters for solar thermal system. [10]

OR

Explain various softwares used for solar energy modeling and simulations. Also explain the concept of ϕ - F chart method for solar energy.

Q.3 Explain the Life Cycle Analysis of solar energy system. Also explain the Time Value of Money for Solar Energy System. [10]

OR

What is Carbon Credit? Explain what is Carbon Credit Certificate and carbon footprint.

SECTION – II

Q.4 Explain the various methods used for wind speed calculations. Also mention different types of Anemometers. [10]

OR

Explain the following terms related with Wind Energy.

Q.5 Explain the importance of wind data analysis. Also, explain Betz's limit. [10]

OR

Explain the working of pitch control and stall control with neat sketch.

Q.6 Explain the Blade Element Theory related with Aerodynamics of wind turbine. [10]

OR

Explain the Airfoil structure of wind turbine. Also, explain the various terms related with Airfoil.

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