

**M. Arch. Sem-III (Sustainable Architecture) (2014 Course) (CBCS) :
WINTER - 2018**

SUBJECT : CLEAN TECHNOLOGIES

Day: Monday
Date: 19/11/2018

W-2018-3475

Time: 10.00 A.M. TO 12.00 NOON
Max.Marks:60

N.B

- 1) Solve any **THREE** questions from each section
 - 2) Answers to Two sections should be written in **SEPARATE** answer books.
 - 3) All Questions carry **10 Marks**
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SECTION - I

- Q.1** Describe following Terms :
- a) Solar Constant & solar Insolation
 - b) What is Array of Solar PV Panels
 - c) Direct and Indirect Energy conversion of renewable energy Sources
 - d) Enlist Various types of renewable energy sources
 - e) Solar Flat Plate Collector for Thermal energy
- Q.2** Write Short Notes:
- a) Describe and differentiate between Renewable energy and Non Renewable energy sources
 - b) Discuss various types of solar cells
- Q.3** Describe following
- a) Environmental and social issues related to renewable energy growth in India.
 - b) Explain Solar Air conditioning
- Q.4** Explain present scenario of renewable energy sector in India
- Q.5** What are different types of Solar PV configuration? Discuss Solar PV system with DC to Ac conversion and storage with Block diagram.

SECTION - II

- Q.6** Describe Following Terms:
- a) Fuel Cells and its applications
 - b) Cut in and Cut Off speed of Wind Turbine
 - c) Load Factor of Hydro power generation
 - d) Ocean thermal energy
 - e) Lignocellulosic bio mass
- Q.7** Write Short Notes
- a) Process of Bio Methanation
 - b) Nuclear Energy
- Q.8** Describe following
- a) Different Types of Wind Turbines
 - b) Write note on Ethanol and Bio Diesel in India
- Q.9** Explain Fundamentals of Wave, Tidal Energy and Ocean Thermal Energy Conversion (OTEC)
- Q.10** Explain growth of Wind power Generation in India, Issues related to Wind power Generation

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