

M. Arch. Sem-III (Sustainable Architecture) (2014 Course) (CBCS)

SUMMER - 2019

SUBJECT : CLEAN TECHNOLOGIES

Day: : Friday
Date: 03/05/2019

S-2019-3742

Time: 02.00 PM To 04.00 PM
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) Evacuated Tube Collectors Technology
- c) Direct and Indirect Energy conversion of renewable energy Sources
- d) Renewable energy sources : unreliable energy sources
- e) Solar Flat Plate Collector for Thermal energy

Q.2 Write Short Notes:

- a) Explain design considerations for Solar PV systems.
- b) List down five major benefits and limitations of renewable energy sources.

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 Explain Government Policies, Present Incentives & Subsidies In India to promote growth of Renewable energy sources.

SECTION - II

Q.6 Describe Following Terms:

- a) Types of Wind Turbine
- b) Bio Refinery
- c) Wave and Tidal Energy
- d) Ocean thermal energy
- e) Load Factor of Hydro power generation

Q.7 Write Short Notes :

- a) Principles of Fuel Cell Technology, Operation of Fuel Cells.
- b) Ocean Thermal Energy Conversion (OTEC).

Q.8 Describe following:

- a) Variability of Wind Speed and its Effect on energy generation & Types of Wind Turbines.
- b) Cogeneration.

Q.9 Explain Fundamentals of Geothermal Energy, Usages of Geothermal energy, Power Generation through Geothermal energy.

Q.10 Explain Principle of Waste to Energy Generation, Municipal Solid Waste Power Generation (MSW), Power Generation from Municipal Sewage and Effluents.

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