

M. Arch. (SUSTAINABLE ARCHITECTURE) Sem. – III (CBCS – 2018 COURSE) :

Winter - 2021

SUBJECT : CLEAN TECHNOLOGIES

Day : Monday

Date : 20-12-2021

W-2021-19810

Time : 10:00 AM TO 12:30 P.M.

Max. Marks : 60

N.B. :

- 1) All questions are **COMPULSORY**.
- 2) Both the sections should be written in **SEPARATE** answer books.
- 3) Figures to the right indicate **FULL** marks.
- 4) Assume suitable data and draw figures if necessary.

SECTION - I

- Q.1** Write short notes on **ANY TWO** of the following : **(10)**
- a) Solar systems for steam Generation.
 - b) Classification of Renewable Energy Sources
 - c) Various types of solar PV cells and Array of Solar PV Panel.
- Q.2** Explain in Brief the following term in detail : **(ANY TWO)** **(10)**
- a) National Solar Mission
 - b) Principle of Solar Energy
 - c) Role of clean technologies in National Energy Security
- Q.3** Answer the following : **(ANY ONE)** **(10)**
- a) Issues and Challenges for Growth of Renewable Energy in India and at Global level.
 - b) Explain design considerations for solar PV systems for a Residential township.

SECTION - II

- Q.4** Write short notes on **ANY TWO** of the following : **(10)**
- a) Classification of Wind turbines
 - b) Advantages and disadvantages of hydro power generation
 - c) Ocean energy
- Q.5** Explain in Brief the following term in detail : **(ANY TWO)** **(10)**
- a) Various components / parts of wind turbine
 - b) Principle of fuel cell technology
 - c) Classification of geothermal systems
- Q.6** Answer the following : **(ANY ONE)** **(10)**
- a) How is the wind formed? Explain different wind patterns. Comment on the effect of these patterns on the wind energy.
 - b) Elaborate on different sources of power generation under new clean technologies.

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