M. ARCH. SEM-III (SUSTAINABLE ARCHITECTURE) (2014 COURSE) (CBCS) : SUMMER - 2018

SUBJECT: CLEAN TECHNOLOGIES

Day : **Monday**
Date : **30/04/2018**

S-2018-3335

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**

SECTION - I

Q.1 Define/ Explain **(10)**

a) Solar insolation & solar constant
b) Methods of hydro power generation
c) Load factor in wind energy generation
d) Ocean Thermal energy conversion
e) Fuel cell and its application

Q.2 Write short notes with sketches **(10)**

a) Flat plate collector for solar water heating, its types and parts

b) Discuss tidal energy & ocean energy

Q.3 Describe the following **(10)**

a) Describe & differentiate Renewable energy non- renewable energy.

b) Advantages of hydropower

Q.4 Explain with sketches Geothermal energy used for cooling & heating for building. **(10)**

Q.5 Write a note on policy measures for promotion of renewable energy and targets of promotion of renewable energy in India. **(10)**

SECTION - II

Q.6 Define/ Explain **(10)**

a) What is biomass co-generation in industry
b) Mention drawbacks of Bio-diesel as fuel
c) Enlist types of wind mills
d) Advantages and limitations of Hydro power generation
e) Biomass and biogas for energy generation

Q.7 Write short note on **(10)**

a) Fuel cell and its applications

b) What is 'slip' in induction generator calculate the rotational speed of a 4 pole induction generator having a synchronous speed of 1500 rpm and slop of 1.5%

Q.8 Describe the following **(10)**

a) Write a note on environmental issues of different renewable energy sources

b) Explain fundamentals of ocean thermal Tidal and wave energy.

Q.9 What are different types of solar PV system configurations? Discuss PV system with DC and AC conversion and storage with block diagram. **(10)**

Q.10 Explain different solar PV systems and design criterion for it with sketches **(10)**

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