

Roll No.

Total Pages : 3

019606

May 2024

B.Tech. (ENV) VI Semester

Non-Conventional Energy Systems (PEC-ENV-603)

Time : 3 Hours]

[Max. Marks : 75

Instructions :

1. *It is compulsory to answer all the questions (1.5 marks each) of Part-A in short.*
2. *Answer any four questions from Part-B in detail.*
3. *Different sub-parts of a question are to be attempted adjacent to each other.*

PART-A

1. (a) Define non-conventional energy. (1.5)
- (b) What do you understand by biomass energy? (1.5)
- (c) What is geothermal energy? (1.5)
- (d) What are the used of photovoltaic cells in solar panels? (1.5)
- (e) Define solar distillation. (1.5)
- (f) Enlist the various components of wind turbines. (1.5)
- (g) What do you understand by wind energy systems? (1.5)

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- (h) Define the term combustion and pyrolysis. (1.5)
- (i) What is anaerobic digestion? (1.5)
- (j) What are the uses of geothermal heat pumps? (1.5)

PART-B

- 2. (a) Explain solar energy and solar thermal systems. (10)
- (b) What are the importance of non-conventional energy systems? (5)
- 3. (a) Differentiate geothermal and ocean energy systems. (5)
- (b) What are the collectors and applications of solar thermal systems? (10)
- 4. Explain each and every component and design procedure for the solar photovoltaic systems. (15)
- 5. (a) What are the components and characteristics of wind turbines? (5)
- (b) Describe the wind power generation and integration into the grid. (10)
- 6. (a) Explain about the various emerging technologies of wind energy systems. (10)
- (b) What are the various applications of biofuels? (5)

- 7. Give brief explanation of the various terminologies : (15)
 - (a) Tidal power.
 - (b) Wave energy.
 - (c) Ocean thermal energy.
 - (d) Geothermal energy.
 - (e) Gasification.
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