| **Paper Code: ME-021** | **Roll No.** | | | | | | | | | |
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# B.Tech.
## (SEM VI) EVEN SEMESTER EXAMINATION, 2015-16
## NON-CONVENTIONAL ENERGY RESOURCES & UTILIZATION

**[Time: 3 hrs.]** **[Max. Marks: 100]**

**Note-**Attempt All questions .All questions carry equal marks.

1. Attempt any **two** parts of the following: - **[10x2 =20]**

   (a) Discuss renewable forms of energy and highlight their merit and demerits.
   (b) Describe principle of solar photovoltaic energy conversion. What are its advantages and disadvantages?
   (c) Briefly describe various biomass conversion technologies.

2. Attempt any **two** parts of the following:- **[10x2 =20]**

   (a) Discuss principle of concentrating solar collectors. How it differs from flat plate collector.
   (b) Explain solar energy operated refrigeration system.
   (c) Describe various solar energy storage systems.

3. Attempt any **tow** parts of the following:- **[10x2 =20]**

   (a) How are the biogas plants classified? Explain them briefly giving their advantages & disadvantages.
   (b) Describe the basic principle of wind energy conversion system and derive the expression for power developed due to wind.
   (c) Describe with the help of neat sketch, horizontal and vertical type wind turbines. Discuss advantages of vertical over horizontal type wind turbine.

4. Attempt any **two** parts of the following:- **[10x2 =20]**

   (a) Describe principle of working of fuel cells. Explain their limitations.
   (b) Explain with sketches various methods of tidal power generation.
   (c) What are the different methods of Hydrogen production? Explain in brief.

5. Attempt any **two** parts of the following:- **[10x2 =20]**

   (a) Explain liquid dominated geothermal power plant
   (b) Explain basic principle of ocean thermal energy conversion (OTEC). Describe closed cycle type OTEC system.
   (c) Define and explain (i) solar constant (ii) decentralized generation and (iii) dispersed generation.