

**Course: Electrical Engineering**

**Sem: V<sup>th</sup>**

**Subject: Advances in Renewable Energy Sources(BTEEE505B)**

**Marks: 60**

**Date: 16/12/2019**

**Time:3Hr**

**Instructions to the Students**

1. Each question carries 12 marks.
2. Attempt **any five** questions of the following.
3. Illustrate your answers with neat sketches, diagram etc., wherever necessary.
4. If some part or parameter is noticed to be missing, you may appropriately assume it and should mention it clearly.

**Q.1 A) Explain different technologies to produce biogas. Also discuss the factors affecting the production of biogas. (6)**

**B) Write short note on i) Anaerobic Digestion ii) Pyrolysis (6)**

**OR**

**Explain Floating drum types biogas plant.**

**Q.2 A) Enlist different types Geothermal resources and explain with neat diagram Flashed steam geothermal power plant. (6)**

**B) How geothermal energy is combined with conventional thermal power plant? Explain in brief with neat diagram. (6)**

**Q.3 A) What are the various types of hybrid energy system? Draw typical curve to justify the choice and role of renewable energy sources constituting a hybrid system. (6)**

**B) Explain with neat block diagram of PV – propane Gas hybrid system (6)**

for residential application.

OR

**Explain Natural convection solar driers in combination with biomass back up heater**

- Q.4 A) **Explain the effect and control techniques of Nuclear Hazards** (6)
- B) **Describe effects and causes of Global Warming.** (6)
- Q.5 A) **What is design for Environment and explain design for environment practices.** (6)
- B) **Describe Environmental impact assessment policy and explain role of key element in EIA process.** (6)
- Q.6 A) **What is Biodiversity? what is its significance** (6)
- B) **With neat Diagram explain carbon cycle and oxygen cycle** (6)

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