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**G.L. BAJAJ INSTITUTE OF TECHNOLOGY & MANAGEMENT**  
**GREATER NOIDA**  
**B. TECH – (VIII) - (CSE)**  
**ONLINE PRE-UNIVERSITY TEST (EVEN SEM 2019-20)**  
**Renewable Energy Resource (ROE 086)**

Faculty Name: Mr. Ujjwal Kumar/Mr. Mahesh Pandey

Time: 2:00Hrs

Max. Marks: 50

- Note:
- (i) The answer should be submitted within 02 Hrs. and 15 Minutes
  - (ii) Diagram should be neat and clean.
  - (iii) Mention Question number/section correctly.
  - (iv) Be precise in your answer.

**Course Outcomes:**

Following are the course outcomes of the subject: -

CO Code	Course Outcome(CO)	Bloom's Level
ROE 086.1	Understand the principle of Solar energy and its conversation in to power.	L-2 (Understanding )
ROE 086.2	Understand the Knowledge of geothermal energy, Magneto - Hydrodynamic, Bio Mass and Fuel cells.	L-2 (Understanding )
ROE 086.3	Describe the concept include in Wind Energy conversation system.	L-2 (Understanding )
ROE 086.4	Discuss Ocean energy, Wave- Tidal energy resources and possibilities of its utilization.	L-2 (Understanding )

**Section: A**

**1. Attempt all questions**

**(2 Marks \*5=10)**

- (a) Write the name of Solar collector material and solar collector application. **(From CO- ROE 086.1, BL-1)**
- (b) What is the role of injection well in Geo-Thermal Power generations? **(From CO- ROE 086.2, BL-1)**
- (c) Differentiate between Battery and fuel Cell. **(From CO- ROE 086.2, BL-1)**
- (d) Write the equation to calculate efficiency of OTEC plant. **(From CO- ROE 086.4, BL-1)**
- (e) What is cause of Wave and Tidal? **(From CO- ROE 086.4, BL-1)**

**Section: B**

**2. Attempt any four question**

**(5 Marks \*4= 20)**

- (a) Describe working of Solar Air heater and Solar water heater. **(From CO- ROE 086.1, BL-2)**
- (b) Explain the working principle of Magneto Hydrodynamic power plant. **(From CO- ROE 086.2, BL-2)**
- (c) Discuss working of fuel cell? Describe working of hydrogen–oxygen fuel cell with a sketch showing reaction. **(From CO- ROE 086.2, BL-2)**
- (d) What is biomass? What are the biomass resources.? Describe how the energy produce from the biomass. **(From CO- ROE 086.2, BL-2)**
- (e) How Wave & Tidal power generation system effect Eco system of Ocean.? Describe the construction and principle of operation of a turbine used for tidal power. **(From CO- ROE 086.4, BL-2)**

**Section: C**

**3. Attempt any two question**

**(10 Marks \*2= 20)**

- (a) Explain working function of Solar collector. Classify and describe one solar collector with diagram. **(From CO- ROE 086.1, BL-2)**
- (b) Discuss origin and types of geothermal energy. Explain the working of Binary cycle geothermal power plants. Write merits and demerits of geothermal energy? **(From CO- ROE 086.2, BL-2)**
- (c) Describe the basic principle of OTEC. What are the main type of OTEC plant? Explain working of close OTEC power plant. **(From CO- ROE 086.4, BL-2)**