Seat No: _____ **Enrollment No: _____**

PARUL UNIVERSITY

FACULTY OF ENGINEERING & TECHNOLOGY

B.Tech. Summer 2018 - 19 Examination

Semester: 5 **Date: 20/05/2019**

Subject Code: 03109346 **Time: 10:30am To 01:00pm**

Subject Name: Non conventional energy resources **Total Marks: 60**

Instructions:

1. All questions are compulsory.
2. Figures to the right indicate full marks.
3. Make suitable assumptions wherever necessary.
4. Start new question on new page.
5. Use steam table/ refrigerant table/ psychometric chart.

Q.1 Objective Type Questions - (All are compulsory) (Each of one mark) **(15)**

1. What is the primary source of energy?
2. What is the full form of CNG?
3. What are renewable sources of energy?
4. List the name of five devices which is operated by solar energy.
5. Explain Beam radiation.
6. What is the full form of OTEC?
7. What is geothermal energy?
8. _____ is not a fossil fuel.
   A) Coal B)Natural gas C) Petroleum D) Wind energy
9. The Hydroelectric power-station on river Tapi in Gujarat is _____.
   A) Ukai B) Dhuvaran C) Panam D) Kadana
10. Which gas contains major proportion in bio-gas?
11. List the types of wind turbine.
12. Describe the function of fuel cell.
13. Mention two designs of biogas plants used in India.
14. What is the full form of KVIC?
15. What is the full form of LPG?

Q.2 Answer the following questions. (Attempt any three) **(15)**

A) Classify the energy sources in details.

B) Define the followings.

(1) Zenith angle (2) Solar constant (3) Hour angle (4) Declination angle (5) Tilt angle

C) Explain the different heat losses in Flat plate Collector in brief.

D) Describe the function of Solar pond with a neat sketch.

Q.3 A) Explain working of horizontal axis wind generator with the help of a schematic diagram. **(07)**

B) Explain the principle of working of a Pyrheliometer with a neat sketch. **(08)**

OR

B) Describe the working of a floating drum type KVIC biogas plant with the help of neat sketch. **(08)**

Q.4 A) Classify the Bio-gas plants. Explain batch type bio-gas plants. **(07)**

OR

A) Describe the advantages and disadvantages of OTEC system **(07)**

B) Describe the function Solar still with a neat diagram. **(08)**