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

PARUL UNIVERSITY

FACULTY OF ENGINEERING & TECHNOLOGY

B.Tech. Winter 2019 - 20 Examination

Semester: 5 **Date: 12/12/2019**
Subject Code: 03109346 **Time: 10:30 am to 1:00 pm**
Subject Name: Non Conventional Energy Sources **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.

Q.1 **Objective Type Questions** - (Fill in the blanks, one word answer, MCQ-not more than Five in case of MCQ) (All are compulsory) (Each of one mark) **(15)**

1. Wind velocity is measured by _____.
2. Define Vertical axis wind turbine.
3. _____ is the angle made between the line joining the Sun to Earth and its projection on the equatorial plane.
4. Which part of solar distillation system is responsible for condensing of water vapour?
   (A) Glass cover (B) Absorber (C) Metal cover (D) Condenser
5. Explain Beam radiation.
6. Which gas contains major proportion in Bio-Gas?
7. What is the full form of WECS?
8. List the renewable sources of energy.
9. What should be the range of Ph value in production of Bio-Gas?
10. By which process is solar energy converted into chemical energy?
11. Pyranometer can measure _____ Radiation.
12. Define Tidal range.
13. Write the Equation of declination angle.
14. Define Zenith angle.
15. What is the full form of KVIC?

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

A) Differentiate between Fixed dome and Floating drum type Bio gas plant.
B) Describe the function of Solar still with sketch.
C) Explain the Working of fuel cell.
D) List the application of Solar energy.

Q.3 A) Describe the Advantages and Disadvantages of OTEC system. **(07)**
B) Explain the function of solar flat plate collector with neat sketch. **(08)**

OR

B) **Determine the number of day light hours** in Srinagar on 5^{th} January and 5^{Th} July. **(08)**
Latitude: $36^{o}5'$

Q.4 A) Explain the function of horizontal axis wind turbine with suitable diagram. **(07)**

OR

A) Describe the importance of factors which are affected to the production of Bio-Gas. **(07)**
B) Explain the Vapour dominated system with neat sketch. **(08)**