

PARUL UNIVERSITY
FACULTY OF ENGINEERING & TECHNOLOGY
M.Tech., Winter 2017 - 18 Examination

Semester: 1**Date: 04/01/2018****Subject Code: 03210130****Time: 2:00 pm to 4:30 pm****Subject Name: Renewable Energy Engineering****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** A. Explain factors affecting biomass generation. (05)
B. Describe the closed cycle OTEC system. (05)
C. Explain need for alternate energy sources. State advantages and disadvantages of Non-Conventional energy sources. (05)
- Q.2** Answer the following questions. (Attempt any three) (15)
A. Explain design principle and operation of any one type of fuel cell.
B. Determine the number of day light hours in Srinagar (Latitude = $36^{\circ} 05'$) on 5th January and 5th July.
C. Write short notes on : (i) Savonious rotor (ii) Darrieus rotor
D. Classify the gasifiers. Explain any one type of gasifier.
- Q.3** A. Which instruments are used for Solar radiation measurements? Explain construction and working of Pyranometer. (07)
B. Give classification of Solar concentrating collectors. Explain cylindrical parabolic concentrator briefly. (08)
- OR**
- B. Derive expression for Power in Wind. (08)
- Q.4** A. Describe the utilization of vapor dominated geothermal energy system for power generation with a neat sketch. (07)
- OR**
- A. Explain the working of single basin arrangement for Tidal Energy. (07)
B. Describe the working of a floating drum type KVIC biogas plant with the help of neat sketch. (08)