

PARUL UNIVERSITY
FACULTY OF ENGINEERING & TECHNOLOGY
B.Tech. Winter 2019 - 20 Examination

Semester: 5
Subject Code: 03110307
Subject Name: Renewable Energy Sources

Date: 07/12/2019
Time: 10:30am to 01:00pm
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. Thermo-chemical conversion of biomass in the partial air supply at high temperature is known as _____.
(a) Pyrolysis (b) Gasification (c) Densification (d) Combustion
2. In the solar box type cooker, Solar Energy is Converted into _____.
(a) Electrical (b) Thermal (c) Both (d) None
3. Which among the following is conventional energy source?
(a) Wind energy (b) Solar energy (c) Geothermal energy (d) Coal
4. Solar cell made of _____.
(a) Aluminum foil (b) Copper (c) Mirror (d) Silicon
5. Bio-diesel is produced from oils or fats using the process known as
(a) Transaction (b) Transformation (c) Transesterification (d) Transportation
6. Enlist the raw materials for biogas generation.
7. What are the disadvantages of conventional drying method?
8. Enlist the factors, which affect the nature of the wind close to the surface of the earth.
9. What are the basic components of a solar Water Heater.
10. Enlist the renewable energy sources.
11. Family biogas plants usually of 3-4 m³ capacity. (True/False)
12. Pyranometer is used to measure solar radiation. (True/False)
13. Solar water heater is used for purification of water. (True/False)
14. Wind energy is a non-conventional energy source. (True/False)
15. The wind turbines convert the kinetic energy of the wind into mechanical energy. (True/False)

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

- (A) Explain Counter Current Gasifiers with neat sketch.
- (B) What are factors considered during the selection of construction site for a biogas plant?
- (C) Explain solar box type cooker.
- (D) Explain Solar Still with Neat Sketch

Q.3 (A) Explain Advantages and Disadvantages of biodiesel. (07)

- (B) Write down the merits and demerits of renewable energy sources. (08)

OR

- (B) Explain Pyranometer with neat sketch. (08)

Q.4 (A) Explain Solar waterHeating system with neat sketch. (07)

OR

- (A) Explain wind mill for water pumping with neat sketch. (07)

- (B) Explain KVIC type floating drum biogas plant in detail. Write down the advantages and disadvantages of KVIC type floating drum biogas plant. (08)