



KERALA AGRICULTURAL UNIVERSITY
B.Sc (Hons.) Agriculture 2014 & Previous Admissions
VI Semester Final Examination-August-2017

Engg.3204

Renewable Energy (1+0)

Marks: 50
Time: 2 hours
(10x1=10)

I Select the most appropriate choice:

- 1 Biomass is the organic matter from:
a) Plant residues b) Charcoal, plant matter and Coal
c) Contemporary biological matter d) Organic compounds derived from fossils
- 2 The common floating gas holder type biogas plant is :
a) KVIC model b) Chinese model
c) Janatha model d) Deenbandhu model
- 3 Biodiesel essentially contains:
a) Vegetable oils b) Esters c) Fatty acids d) Ethyl Alcohol
- 4 Alcohol production from simple sugars requires -----
a) Enzymes b) Catalyst c) East d) Fermentation
- 5 Common biofuels are:
a) Methyl Alcohol and biodiesel b) Gasohol and CNG c) Firewood and coal
d) Biogas, Producer gas, Ethanol, biodiesel and firewood
- 6 Wind turbine means:
a) A machine which can rotate in wind b) Machine producing electricity
c) A machine for electricity production from wind d) None of the above
- 7 Solar flat plate collectors are used for:
a) Solar drying of agricultural produce b) Water heating
c) Air heating d) All the above
- 8 A single solar cell has an approximate maximum voltage of:
a) 0.6 V b) 1.5 V c) 2 V d) 12 V
- 9 If the wind velocity doubles, the power of the wind increases by ----- times :
a) Two b) Three c) Four d) Eight
- 10 ----- is the optimum pH range for biogas production.
a) 6.8 - 7.2 b) 6.2 - 6.8 c) 7.2 - 7.6 d) 6.4 - 8.2

II Write short notes on any FIVE

(5x2=10)

- 1 Bioenergy
- 2 Photosynthesis
- 3 Biodiesel
- 4 Horizontal axis wind turbines
- 5 Hydraulic Retention time
- 6 Pyrolysis
- 7 Pyranometer

III Answer any FIVE

(5x4=20)

- 1 Classify energy sources with examples.
- 2 Explain the factors affecting the working of biogas plants.
- 3 Explain thermo chemical gasification process of biomass with the help of suitable diagram
- 4 Briefly explain the working of solar pond with a line diagram.
- 5 What is meant by briquetting of biomass? Explain a briquetting machine.
- 6 Explain production of alcohol from molasses with a flow chart.
- 7 How wind turbines are classified? Give examples for each type.

IV Write essay on any ONE

(1x10=10)

- 1 What are the basic principles involved in tapping thermal energy of sun? Explain with the help of suitable line diagrams different systems used for solar thermal energy utilization.
- 2 Explain the construction and working of a floating gas holder type biogas plant with the help of a neat diagram. List its differences with a fixed dome type plant.