

1001

KERALA AGRICULTURAL UNIVERSITY

B.Sc (Hons.) Ag. 2011 Admission

VIth Semester Final Examination- July /August -2014

Cat. No: Engg.3204

Marks: 80

Title: Renewable Energy (1+0)

Time: 3 hours

I Give short answer/Fill in the blanks

(10 x 1 = 10)

1. Define hydraulic retention time
2. What is beam radiation?
3. Average Betz's limit is assumed to be.....
4. The minimum wind velocity for using wind power for agricultural purposes is
5. is an instrument which measures beam radiation.
6. State the optimum pH and temperature needed for biogas production.
7. In industry, briquettes can be used as fuel in
8. The instrument used for measuring wind velocity is
9.are used to directly convert solar energy to electrical energy.
10. A man can develop an average power output ofhp

II Write short notes/answers on any TEN

(10 x 3= 30)

1. What are the disadvantages of non-renewable sources of energy?
2. Solar photovoltaic principle
3. Pyrolysis
4. Solar pond
5. Producer gas
6. HAWT
7. VAWT
8. Write the advantages and disadvantages of solar energy.
9. Specify the different types of gasifiers
10. Mention the different types of briquetting
11. Briefly explain the factors affecting biogas production.
12. Specify the points to be considered for the selection of site for the erection of a windmill.

III Write short essays on ANY SIX of the following

(6 x 5= 30)

1. Draw a neat diagram of a down draft thermal gasifier and explain the various reactions that take place during the gasification process.
2. How does power of wind vary with respect to its velocity? Why?
3. Define solidity. Explain the advantages of a high solidity wind mill.
4. Differentiate between a flat plate and focusing type water heater .
5. Differentiate between fixed dome and floating gas holder type biogas plant.
6. How do we get electricity from water?
7. What is the difference between tidal energy and wave energy electricity generation?
8. What are pros and cons of biomass utilization?

IV Write an essay on any ONE

(1 x 10= 10)

1. Explain the constructional details and working of floating gas holder type biogas plant, with a neat sketch.
2. Write the prospects of application of renewable energy in India.