

# KERALA AGRICULTURAL UNIVERSITY

B.Sc (Hons.) Ag. 2012 Admission

VI<sup>th</sup> Semester Final Examination- July /August -2015

Cat. No: Engg.3204

Title: Renewable Energy (1+0)

Marks: 80

Time: 3 hours

- I. Fill up the blanks/Pick the correct answers: (10x1=10)
1. Biogas is a mixture of ----- and Carbon dioxide.
  2. Janta and Deenbandhu biogas plants are examples of -----biogas plant.
  3. The optimum temperature for maximum production of biogas from slurry is -----
  4. Wind speed is measured by ----- ✓
  5. The energy in wind is proportional to the ----- of its velocity.
  6. The best orientation of a solar plate collector is facing -----.
  7. Solar radiation absorbed by the atmosphere is about  
a. Zero % b. 5% c. 10-20% d. More than 50%
  8. Pyranometer is used for collecting ----- ✓  
a. Wind Energy b. Tide energy c. Fusion energy d. Solar energy
  9. Digester is an essential part of -----  
a. M.H.D generator b. Fusion energy system c. Wind energy conversion system  
d. Biomass energy conversion system
  10. The main constituent of producer gas is ----- ✓  
a. Carbon monoxide b. Freon c. Carbon dioxide d. Methane

- II. Write short notes on (any ten) (10x3=30)

1. Anaerobic Digestion ✓ 11 ✓
2. Bio fuels ✓ 10
3. Gasification
4. Pyrolysis
5. Solar Cooker ✓ 9
6. Photovoltaic cell ✓ 8
7. Pye heliometers
8. Wind Pump
9. Solar Pond ✓ (9)
10. Vertical Axis Rotor
11. Acid Formers
12. Wind mill ✓

*Application of wind mills - see the 12*

- III. Write short essays on any six of the following (6x5=30)

1. Biomass and its multi-purpose utilization ✓
2. Phenomena of wind generated on earth's surface. - (8)
3. Non- Conventional Sources of energy
4. Advantages and disadvantages of photo-voltaic solar energy conversion.
5. Different types of Gasifiers ✓
6. Briquettes and types of Briquetting. ✓
7. Constraints in production of liquid bio fuels. ✓
8. Integration of renewable energy systems.ods

- V. Write essay on (any one) (1x10=10)

1. Construction and working of a fixed dome type biogas plant with neat sketch.
2. Solar energy and methods of collection of solar energy