



KERALA AGRICULTURAL UNIVERSITY
B. Sc. (Hons.) Ag. 2015 Admission
VI Semester Final Examination- July -2018

Engg.3204

Renewable Energy (1+0)

Marks: 50

Time: 2 hours

(10x1=10)

I Fill in the blanks:

- 1 The major combustible gas present in the biogas
- 2 Solar PV systems collect the sun's energy and convert it into
- 3 The value of the Betz's coefficient is
- 4 *Saccharomyces cerevisiae* is used to produce biofuel
- 5 Name of the solar energy gadget used for converting salt water into drinking water

State True or False

- 6 Direct burning of biomass in the presence of excess air is called as combustion process.
- 7 Biomass can produce fuels only in solid and liquid forms
- 8 Briquetting is the process of converting high density material into low density material per unit volume
- 9 The methane content in biogas is 55 to 65 percent
- 10 Solar drying systems are equally effective in both summer and winter.

II Write Short notes on ANY FIVE of the following

(5x2=10)

- 1 Horizontal axis windmills
- 2 Solar cookers
- 3 Define biomass. List out the different biomass suitable for biogas production
- 4 Benefits of biomass briquettes
- 5 Biogas requirement for lighting, cooking and engine running
- 6 Solar photovoltaic technology
- 7 Define energy and classify the different forms of energy

III Answer ANY FIVE of the following

(5x4=20)

- 1 Solar energy based gadgets used in agriculture sector.
- 2 Dome and drum type of biogas plants
- 3 Piston press briquetting
- 4 Classification of biogas plants.
- 5 Biomass conversion technologies
- 6 KVIC biogas plant with neat sketch.
- 7 Can you suggest alternate biofuels for petrol and diesel fuels? Write short notes on transesterification process.

IV Write an essay on ANY ONE of the following

(1x10=10)

- 1 Different types of gasifiers with neat sketch.
- 2 Distinguish between the solar and windmill based water pumping system
