



**KERALA AGRICULTURAL UNIVERSITY**  
**B. Sc. (Hons.) Ag. 2016 admission**  
**VI Semester Final Examination - July-2019**

Engg.3204

**Renewable energy and green technology (1+1)**

**Marks: 50**  
**Time: 2 hours**

**I Answer the following (10x1=10)**

- 1 Define energy and renewable energy.
- 2 List two commonly used fossil fuels.
- 3 Name two states in India which lead in electricity production from wind.
- 4 Give four examples for biofuels.
- 5 Give expansions for MNRE and ANERT.
- 6 How much biogas is obtainable from one kg of cow dung?
- 7 Which is the first airport in the world to run on solar energy?
- 8 What is solar constant?
- 9 Name the micro-organism and the species used for alcohol fermentation.
- 10 List two combustible constituents each of producer gas and biogas.

**II Write short notes on ANY FIVE of the following (5x2=10)**

- 1 Trans-esterification.
- 2 Briquetting.
- 3 Combustion.
- 4 Photo voltaic cell.
- 5 Solar cooling.
- 6 Ethanol as fuel.
- 7 Pyrolysis of biomass.

**III Answer ANY FIVE of the following with the help of labeled diagrams (5x4=20)**

- 1 Working of a solar cooker.
- 2 Construction of a flat plate collector.
- 3 Construction of wind turbines for electricity production.
- 4 Solar dryer.
- 5 Solar water heater.
- 6 Concentrating collector.
- 7 Solar PV powered water pump.

**IV Write an essay on ANY ONE of the following (1x10=10)**

- 1 Describe the construction and working of a floating gas holder type biogas plant with the help of a neat diagram.
- 2 Describe thermo-chemical gasification of biomass with the help of a neat line diagram.  
List different types of gasifiers.

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