



KERALA AGRICULTURAL UNIVERSITY
B. Tech. (Agrl. Engg.) 2020 Admission
IV Semester Final Examination – August 2022

Fpme.2208

Fundamentals of Renewable Energy Sources (2+1)

Marks: 50
Time: 2 hours

I State True or False

(10x1=10)

1. Wood is a renewable source.
2. All of the conventional energy sources are non renewable.

Answer the following

3. What is the SI unit of solar radiation?
4. Name the instrument used for measuring beam radiation.
5. Define diffuse radiation.
6. What is Betz limit ?
7. Name the device used for measuring wind velocity.
8. Define tip speed ratio of a wind turbine.
9. Which gas is the main composition of biogas ?
10. Name any two models of biogas plant.

II Write short notes on ANY FIVE of the following

(5x2=10)

1. Write short note on renewable energy sources.
2. Differentiate between renewable and non renewable energy.
3. What are the advantages of solar energy?
4. Define solar constant.
5. What are the advantages of wind energy conversion system?
6. What do you mean by rated wind speed with respect to wind turbines?
7. List out the different types of biomass that are used as fuel.

III Answer ANY FIVE of the following

(5x4=20)

1. Write short note on clean development mechanism.
2. List out the advantages and disadvantages of photovoltaic cells.
3. Explain the working of a solar still.
4. What are the different energy sources used for agricultural production.
5. 'Energy released from biomass comes from sun'. Elaborate on this point.
6. Elaborate on the construction and working of a horizontal axis wind turbine with sketches.
7. Differentiate between biogas and biomass.

IV Write an essay on ANY ONE of the following

(1x10=10)

1. Explain different types of solar collectors with neat sketches.
2. Explain any two methods of thermo-chemical conversion of biomass with neat sketches.
