



KERALA AGRICULTURAL UNIVERSITY
B.Tech.(Agrl. Engg.) 2018 Admission
VI Semester Final Examination- December 2021

Fpme.3215 Energy Technology for Renewable Power Production (2+0) Marks: 50
Time: 2 hours

- I Fill in the blanks (10x1=10)**
1. Minihydel plant has the head difference in the range of _____ m.
 2. The resulting motive force due to the change in momentum gives the rotation to the turbine shaft in _____ turbine.
 3. Common electrolyte used in alkaline fuel cell is _____.
- State True or False**
4. The primary function of a burner is to coagulate the fuel drops to reduce the surface area for better combustion
 5. Combustion is the conversion of thermal energy to chemical energy.
- Define the following**
6. Photovoltaic
 7. Control rods in nuclear reactor
 8. Cut-in wind velocity
 9. OTEC
 10. Biogas
- II Write short notes on ANY FIVE of the following (5x2=10)**
1. Write a short on the energy consumption pattern in India.
 2. Differentiate nuclear fission and fusion
 3. Write about the systems employed in harnessing energy from waves.
 4. Describe the classes of geothermal resources considered for power generation applications.
 5. What is wind farm? What are the points to be considered in selecting a wind farm location?
 6. Discuss about the technological options available in power generation from industrial waste.
 7. Write a short note on landfills and energy recovery from landfills.
- III Answer ANY FIVE of the following (5x4=20)**
1. Explain the procedure for the determination of stoichiometric air requirement of a typical fuel.
 2. Give a note on the fuel cell based power generation system with suitable fuels and operating conditions.
 3. Describe the sequential operations of a steam power plant with all the major components and their schematic diagram.
 4. Discuss about the open cycle and closed cycle magneto hydro dynamic based power generation systems.
 5. Describe the photovoltaic based power generation system and its applications.
 6. How to assess the power available in wind? Give the methodologies of wind energy estimation of a given location.

7. Explain the principles involved in the design of combustion equipment with operational parameters.

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

1. Explain the system of hydro electric power generation with schematic illustration of components.
2. Elaborate the construction details and power generation principle of central receiver type solar power plants.
