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KERALA AGRICULTURAL UNIVERSITY
B. Tech. (Agrl. Engg.) 2020 Admission
VI Semester Final Examination – July 2023

Fpme.3215

Energy Technology for Renewable Power Production (2+0)

Marks: 50
Time: 2 hours

I Fill in the blanks (10x1=10)

1. is the capability to produce motion, force, work, change in shape, change in form etc.
2. Coal, oil, gas, uranium and hydro are known as sources.
3. Firewood, animal dung and agricultural waste etc. are called as.....
4. The layout of a modern steam power plant comprises of which four circuits:
5. is an official survey/study of energy consumption/processing/supplying aspects related with an organization, system, process, plant, equipment.
6. The ratio of radiation received on earth's horizontal surface over a given period to radiation on equal surface area beyond earth's atmosphere in direction perpendicular to the beam is called.....

State True or False

7. Solar radiation may be measured by following devices:
(i) Pyranometer
(ii) Pyrheliometers
(iii) Sunshine recorder
8. A wind mill works on the principle of converting potential energy of the wind to mechanical energy.
9. Biomass is considered as a renewable source of energy because the organic matter is generated every day.
10. Non-conventional sources of energy are cheaper than conventional sources of energy in most of the cases.

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

1. Write short notes on Magneto hydro dynamic power generation.
2. Write short notes on conventional and non-conventional energy sources.
3. Write short notes on fossil fuel as a conventional energy source.
4. Explain beam radiation and diffuse radiation.
5. Write short notes on fuel cells.
6. Explain in brief utilization aspects of wind energy.
7. Write short notes on Ocean energy sources.

III Answer ANY FIVE of the following (5x4=20)

1. Explain with the help of a diagram the concept of solar pond.
2. Illustrate the advantages and disadvantages of wind energy.
3. Explain in brief the production and application of bio gas.
4. What is the working principle of Ocean Thermal Energy Conversion (OTEC)?
5. What is open cycle and closed cycle MHD power generation?
6. Explain with the help of schematic diagram the layout of a Fuel handling equipment in steam power plant.
7. Explain the factors responsible for selection of site for a hydro-electric plant.

IV

Write an essay on ANY ONE of the following

(1x10=10)

1. Write short notes on solar green-houses and global warming.
2. Elaborate in details with diagrams the classification and description of wind mills/machines.
