KERALA AGRICULTURAL UNIVERSITY

B.Tech.(Agri. Engg) 2016 Admission

VI Semester Final Examination-June 2019

Fpme.3215 Energy Technology for Renewable Power Production (2+0)

Marks: 50

Time: 2 hours

I Fill up the blanks **(10x1=10)**

1 _____ is used to discharge the water during flood period without passing through the power house.

2 The ideal standard potential of fuel cell (H_2 and O_2 reaction) at 298 K is _____

3 Major percentage of tide producing force is by the gravitational attraction of _____ on the water bodies earth and the oceans.

State True or False

4 In India, more than 65% of electricity is produced through thermal power plants.

5 In power plants, the maximum blade efficiency and efficiency range increase with an increase in number of stages.

Define the following

6 Combustion

7 Fuel

8 Beam radiation

9 Moderating materials in nuclear reactor

10 Land fills

II Write Short notes on any FIVE of the following **(5x2=10)**

1 Renewable energy potential in India.

2 How to assess the flue gas quality and quantity released during combustion?

3 Basic concept of energy harnessing through OTEC.

4 Significance of hydrogen as transport fuel.

5 Velocity and power duration curve and their role on wind energy assessment and harnessing.

6 Basic principle of solar photovoltaic conversion.

7 Working principle of magneto hydro dynamic based power generation.

III Answer any FIVE of the following. **(5x4=20)**

1 Principles of combustion with the chemical reactions during combustion process.

2 Types of steam turbines and their significance in power generation.

3 Classifications of hydel plants for power generation.

4 Cycles or methodologies adopted in harnessing energy from geothermal resources with schematic flow diagram.

5 Various instruments used for the estimation of solar radiation.

6 Application of biogas technology for power generation with schematic diagrams of basic components.

7 Possible power generation technologies from urban and municipal wastes with their significance on field level adaptation.

IV Answer any ONE of the following **(1x10=10)**

1 Nuclear power reactor construction and operation with illustration about basic components.

2 Components and working of wind aero generation system with schematic diagram.

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