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.