Registration no: | | | | | | | | | | |

Total Number of Pages: 01 **M.TECH**
PEPE204

2nd Semester Back Examination – 2016-17
ELECTRICAL ENERGY SYSTEM
BRANCH(S): POWER ELECTRONIC, POWER ELECTRONIC & DRIVES, POWER ELECTRONIC AND ELECTRICAL DRIVES
Time: 3 Hours
Max Marks: 70
Q.CODE:Z1073
Answer Question No.1 which is compulsory and any five from the rest.
The figures in the right hand margin indicate marks.

Q1 **Answer the following questions:** **(2 x 10)**

a) Distinguish between beam radiation and diffuse radiation?
b) What do you understand by geothermal field?
c) Define reflected radiation.
d) What is the disadvantage of wind energy system?
e) Define solar declination.
f) Draw the block diagram for grid connected wind turbine generator.
g) Define geothermal gradients.
h) What is the meaning of double output system in wind farm?
i) What is solar pond?
j) Define the term nacelle in wind farm.

Q2 **a)** What is wave converter? Briefly explain any two types of wave converter. **(5)**
b) Discuss the power-speed characteristics of wind energy generator. **(5)**

Q3 **a)** Explain briefly on wind energy development in India. **(5)**
b) Explain the terms:cut-in speed, cut-out speed, windrose, and wind vane. **(5)**

Q4 Discuss the various types of solar radiation measurement instruments. **(10)**

Q5 **a)** Write the application of solar energy to space heating. **(5)**
b) Discuss the issues related to grid interconnection of wind farms. **(5)**

Q6 **a)** Distinguish between lift type and drag type wind turbines. **(5)**
b) Explain the characteristics of geothermal resources. **(5)**

Q7 **a)** Write the principles of tidal energy conversion and explain how we can regulate and control the tidal power generation. **(5)**
b) Explain briefly drilling, logging & cementing operations for geothermal wells. **(5)**

Q8 **Write Short Notes (Any Two)** **(5 x 2)**

a) Solar Collection Devices
b) Aerodynamics of wind rotors
c) Reactive power compensation in wind farm.
d) Radiation flux at the earth's surface.