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

**Total Number of Pages: 02**

**B .TECH**
**PEME5308**

## 6th Semester Regular / Back Examination 2016-17

## NONCONVENTIONAL ENERGY SOURCES

**BRANCH(S): AUTO, CIVIL, MANUFAC, MANUTECH, METTA, MME, PE, PLASTIC**

**Time: 3 Hours**
**Max Marks: 70**
**Q.CODE: Z887**

**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)** What are the different forms of energy?
**b)** Name at least three green house gases responsible for global warming.
**c)** Define collector efficiency.
**d)** What are the instruments used for measuring solar radiation and sunshine?
**e)** Define Tip speed ratio
**f)** How the wind mills are classified?
**g)** Mention four factors affecting biogas generation.
**h)** Differentiate tide and wave.
**i)** What are the potential applications of the gasifier?
**j)** List the types of fuel cells.

**Q2** Explain with neat sketches, the operation of a geothermal power plant. **(10)**

**Q3** Explain the principle of building integrated PV system with suitable sketch. **(10)**

**Q4** **a)** Explain a) Pitch control b) Pitch angle c) teethering. **(6)**

**b)** Differentiate between horizontal and vertical axis wind turbines with neat sketch of both. **(4)**

**Q5** **a)** Write short note on bio energy from agriculture waste. **(5)**

**b)** Write short note on bio energy by burning plants. **(5)**

**Q6** Discuss the following

**a)** Obstacle to the implementation of renewable energy sources. **(5)**

**b)** Advantages of renewable energy sources. **(5)**

**Q7** **a)** Enumerate the different types of concentrating type solar collectors. **(5)**

**b)** Why orientation is needed in concentrating type collectors? **(5)**

**Q8** **Write short notes on (any two)** **(5+5)**

**a)** Prospects of renewable energy sources in India

**b)** Biomass Gasification

**c)** Solar Furnaces

**d)** Solar Distillation