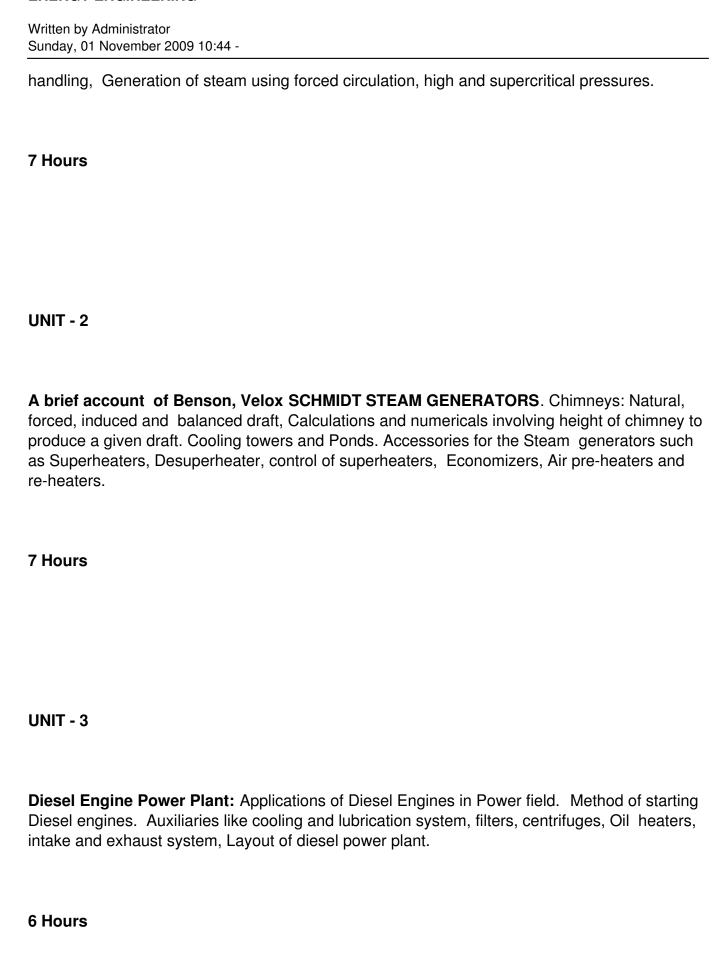
Written by Administrator Sunday, 01 November 2009 10:44 -

Subject Code
06ME54
IA Marks
25
No. of Lecture Hrs./ Week
04
Exam Hours

Written by Administrator

Sunday, 01 November 2009 10:44 -
03
Total No. of Lecture Hrs.
52
Exam Marks
100
PART - A
UNIT - 1
<b>Steam Power Plant:</b> Different Types of Fuels used for steam generation, Equipment for burning coal in lump form, strokers, different types, Oil burners, Advantages and Disadvantages of using pulverized fuel, Equipment for preparation and burning of pulverized

coal, unit system and bin system. Pulverized fuel furnaces, cyclone furnace, Coal and ash



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### **UNIT - 4**

**Hydro-Electric Plants**: Hydrographs, flow duration and mass curves, unit hydrograph and numericals. Storage and pondage, pumped storage plants, low, medium and high head plants, Penstock, water hammer, surge tanks, gates and valves. General layout of hydel power plants.

6 Hours

# PART - B

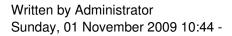
**UNIT - 5** 

**Nuclear Power Plant**: Principles of release of nuclear energy; Fusion and fission reactions. Nuclear fuels used in the reactors. Multiplication and thermal utilization factors. Elements of the nuclear reactor; moderator, control rod, fuel rods, coolants. Brief description of reactors of the following types-Pressurized water reactor, Boiling water reactor, Sodium graphite reactor, Fast Breeder reactor, Homogeneous graphite reactor and gas cooled reactor, Radiation hazards, Shieldings, Radio active waste disposal.

6 Hours

**UNIT - 6** 

**Solar Energy:** Solar Extra terrestrial radiation and radiation at the earth surface,



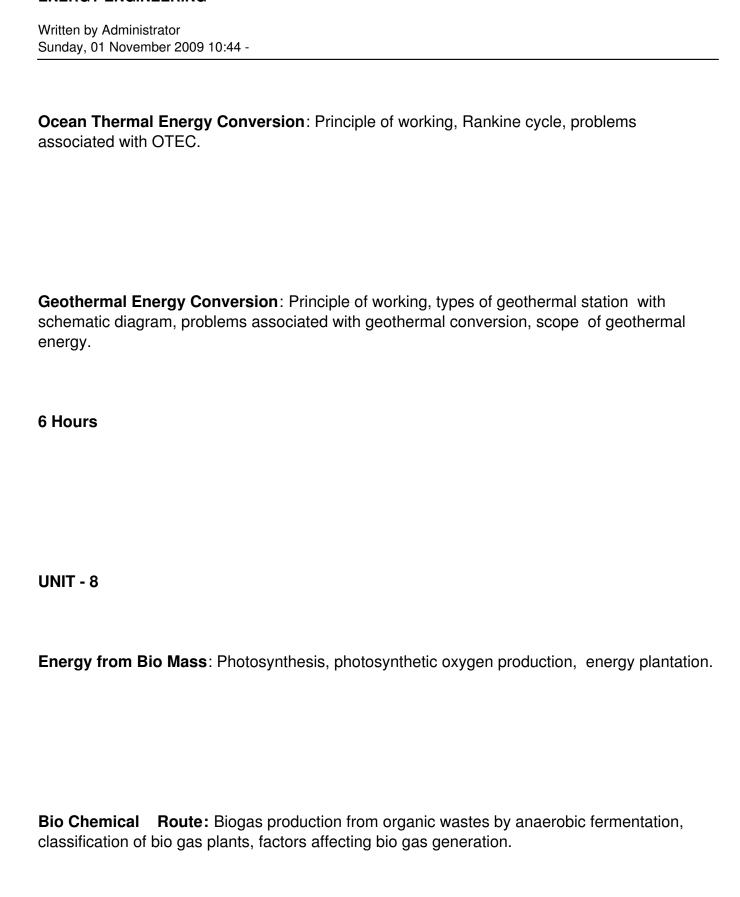
radiation-measuring instruments, working principles of solar flat plate collectors, solar pond and photovoltaic conversion [Numerical Examples].

**Wind Energy**: Properties of wind, availability of wind energy in India, wind velocity and power from wind; major problems associated with wind power, wind machines; Types of wind machines and their characteristics, horizontal and vertical axis wind mills, coefficient of performance of a wind mill rotor [Numerical Examples].

### 8 Hours

## **UNIT - 7**

**Tidal Power**: Tides and waves as energy suppliers and their mechanics; fundamental characteristics of tidal power, harnessing tidal energy, limitations.



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Thermo Chemical Route: Thermo chemical conversion on bio mass, types of gasifiers. 6 Hours **TEXT BOOKS:** Power Plant Engineering, P. K. Nag Tata McGraw Hill 2<sup>nd</sup> edn 2001. 1. 2. Power Plant Engineering, Domakundawar, Dhanpath Rai sons. 2003 **REFERENCE BOOKS:** 1. Power Plant Engineering, R. K. Rajput, Laxmi publication, New Delhi. 2. Principles of Energy conversion, A. W. Culp Jr., McGraw Hill. 1996

Non conventional resources: B H Khan TMH - 2007

Non conventional Energy sources, G D Rai Khanna Publishers.

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