



Reg. No. : .....

Name : .....

**Eighth Semester B.Tech. Degree Examination, April 2014**  
**(2008 Scheme)**

**08.801 : ENERGY MANAGEMENT (MPU)**

Time : 3 Hours

Max. Marks : 100

**Instructions** : Answer **all** questions of Part – A and **any one full** question from **each** Module of Part – B.

**PART – A**

**(10x4=40 Marks)**

1. What are the different resources used to extract biomass energy ?
2. How is hydraulic energy converted to mechanical energy ?
3. Discuss energy storage in power stations.
4. What is the role of computers in energy management ?
5. Why is energy management considered significant ?
6. Discuss heat regenerators.
7. What are heat pipes ?
8. How is energy produced from fuel cell ?
9. Why is energy audit necessary ?
10. What are the different economic sources of waste heat ?

**PART – B**

**(3x20=60 Marks)**

**Module – I**

11. What are the two distinct thermal energy storage systems ? What is the typical value of storage density of sensible heat energy storage ? **20**
12. With a schematic explain at length a boiling water reactor plant. **20**

**Module – II**

13. What is the significance of energy management control systems. Discuss various systems. **20**
14. Discuss energy strategies and energy planning in view of energy crisis. **20**

**Module – III**

15. Discuss heat pump system and their importance in waste heat recovery purposes. 20
16. A generating station has a maximum demand of 50000 kW. Calculate the cost per kWh delivered from the following data :
- i) Capital cost : ₹  $96 \times 10^5$
  - ii) Annual cost of fuel and oil ₹  $9 \times 10^5$
  - iii) Taxes wages, salaries ₹  $6 \times 10^5$
- Rate of interest and depreciation is 10%. Annual load factor is 50%. 14
- Explain how demand factor and load factor affect the economy of power systems. 6