

**B.TECH. SEM -VI MECHANICAL 2014 COURSE (CBCS) :
WINTER - 2017**

SUBJECT: Elective-I ENERGY AUDIT & MANAGEMENT

Day: **Friday**
Date: **24/11/2017**

W-2017-2229

Time: **10.00 AM TO 01.00 PM**
Max Marks: **60**

N.B:

- 1) All questions are **COMPULSORY**.
- 2) Figures to the right indicate **FULL** marks.
- 3) Draw neat and labeled diagram **WHEREVER** necessary.
- 4) Assume suitable data if necessary.

Q.1 Explain the silent features of energy conservation of act, 2001. **(10)**

OR

Q.1 Define the energy policy of government of India and explain the concept of energy management. **(10)**

Q.2 What is Sankey diagram? How is it useful for analysis and auditing? **(10)**

OR

Q.2 What do you understand from the term 'Energy Balance'? How is study of energy balance useful for energy conservation measures? **(10)**

Q.3 Explain the need for economic analysis for energy conservation measures and need for modernization of existing power plants in India. **(10)**

OR

Q.3 Evaluate the financial of merit of a proposed projects shown below. Consider annual discount rate of 8% for each project use NPV (net present value) analysis technique. **(10)**

Capital cost (₹)	Project -I 30,000	Project- II 30,000
Year	Net annual savings(₹)	Net annual savings(₹)
1	6000	6600
2	6000	6600
3	6000	6300
4	6000	6300
5	6000	6000
6	6000	6000
7	6000	5700
8	6000	5700
9	6000	5400
10	6000	5400

Q.4 What are different types of motors used? Explain in detail the energy efficiency improvement in use of motors. **(10)**

OR

Q.4 Explain the terms power factor, maximum demand and copper losses. Identify methods to improve these factors. **(10)**

Q.5 Explain different energy conservation opportunities in comprised air system. **(10)**

OR

Q.5 Explain heat recovery from process heating application in modern thermal power plant. What are the actions taken to improve the efficiency of the plant? **(10)**

Q.6 Explain the term energy audit. How does energy audit help us to improve the efficiency of industrial plants? **(10)**

OR

Q.6 Explain the aims of energy audit. Why accuracy in energy audit measurements is important? **(10)**

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