

UNIVERSITY OF PUNE
[4363]-167
B. E. (ELECTRICAL) Examination 2013
ENERGY AUDIT AND MANAGEMENT
(2008 Course)

[Total No. of Questions:12]
[Time : 3 Hours]

[Total No. of Printed pages :2]
[Max. Marks : 100]

Instructions :

- (1) *Answers to the two Sections should be written in separate answer-books*
 - (2) *Neat diagram must be drawn wherever necessary.*
 - (3) *Figures to the right indicate full marks.*
 - (4) *Assume suitable data, if necessary.*
 - (5) *Use of logarithmic tables slide rule, Mollier charts, electronic pocket calculator and steam tables is allowed.*
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SECTION-I

- Q.1a) List the strategies for better energy security of the nation. [8]
b) Give a brief summary of Indian & Global Energy Scenario. [8]
- OR**
- Q.2a) Write a short note on Energy needs of growing economy. [8]
b) What is the concept of Green Building? [8]
- Q.3a) Discuss in detail objectives & scope of Demand Side Management. [8]
b) Give the structure of Energy Management Cell in a Industry. [8]
What is the role of top management towards energy conservation?
- OR**
- Q.4a) Define DSM, highlight the areas of development of DSM in commercial sector. [8]
b) Distinguish between duties of Energy Manager & Energy Auditor. [8]
- Q.5a) Explain the following techniques with their use for energy analysis [8]
i) Pie-Chart ii) Least Square Method
b) Give the typical Energy Audit Report Format. [10]
- OR**
- Q.6a) List various instruments & state their use in carrying out Energy Audit. [8]
b) Distinguish between Preliminary Energy Audit & Detailed Energy Audit. [10]

SECTION II

- Q.7a) Write a short note on following. [8]
i) ABT Tariff
ii) TOD Tariff
b) Explain the following financial appraisal techniques. [8]
i) Net Present Value
ii) Internal Rate of Return

OR

- Q.8a) Discuss the main objectives of carrying out sensitivity analysis. Also [8]
state the different factors that are considered for sensitivity analysis.
b) Calculate simple payback period and % return on investment (ROI) [8]
for a project that cost Rs.90 Lakhs and Rs 8 Lakhs on an average to
maintain and operate and is expected to save annually Rs. 20Lakhs.
Comment on ROI whether to implement on the project.
Q.9a) Explain various energy conservation opportunities in electrical power [10]
distribution system.
b) Explain various Energy conservation options in commercial sectors. [8]

OR

- Q.10a) Explain various energy conservation opportunities in pumping system. [10]
b) Explain in detail advantages and disadvantages of co-generation. [8]
Q.11a) Explain energy audit case studies in following sector with various [16]
energy saving opportunities:
I) Paper and pulp industry
II) Textile industry

OR

- Q.12 Explain energy audit case studies in following sector with various [16]
energy saving opportunities:
I) Sugar industry
II) Steel industry