

**M. ARCH. SEM-I (SUSTAINABLE ARCHITECTURE) (2014  
COURSE) (CBCS) : SUMMER - 2018  
SUBJECT: ENERGY MANAGEMENT & AUDIT**

Day : **Friday**  
Date : **04/05/2018**

**S-2018-3329**

Time: **02.00 PM To 04.00 PM**  
Max. Marks : 60

**N.B.:**

- 1) Solve any **THREE** questions from each section.
- 2) Answer to both the sections should be written in **SEPARATE** answer books.
- 3) Figures to **RIGHT** indicate full marks.

**SECTION-I**

- Q.1** Define or Describe in the brief following terms (**Any Five**) **(10)**
- a) Power Factor and Maximum Demand
  - b) Potential Energy and Kinetic Energy
  - c) Single Part Tariff and Two Part Tariff
  - d) Load factor and Diversity factor
  - e) Gross and Net Calorific value of fuel
  - f) Renewable energy and Non-renewable energy
  - g) Commercial and Non-commercial energy
- Q.2** Write short notes on the following (**Any Two**) **(10)**
- a) Write a note on Classification on Energy Sources
  - b) Describe three modes of Heat Transfer – Conduction, Convection and Radiation
  - c) Write a note on Pricing of Oil and Gas in India
  - d) Energy Intensity
  - e) Present Power generation scenario in India
  - f) List down Designated Consumers
- Q.3** Describe the following (**Any Two**) **(10)**
- a) Differentiate between Energy Conservation and Energy Efficiency with examples. Write down benefits of Energy Efficiency to Industry and Nation
  - b) Write down First, Second and Third law of Thermodynamics
  - c) List down a) Short term (immediate) b) Medium term and c) Long term Strategies available for a Energy secure Nation
  - d) Write a note on Integrated Energy Policy
- Q.4** Long Question **(10)**
- Write down Salient features each of The Electricity Act 2003 and describe its status of implementation
- Q.5** Long Question **(10)**
- Write down Salient features each of Energy Conservation Act 2001 and Energy Conservation (Amendment) Act 2010

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**SECTION – II**

- Q.6** Define the following terms (**Any Five**) **(10)**
- a) Energy Audit
  - b) Energy Management
  - c) External Benchmarking
  - d) Simple Payback period
  - e) Net Present Value
  - f) Internal Rate of Return
- Q.7** Write short notes of the following (**Any Two**) **(10)**
- a) Energy Audit Vs Energy Management
  - b) Scope of Work and Methodology for Walk through Energy audit
  - c) List down Instruments used for measurements in Electrical, Mechanical and Thermal Systems Energy Audits
  - d) Shared Savings Performance Contract
- Q.8** Describe the following (**Any Two**) **(10)**
- a) Describe Role of Energy Service companies (ESCO)
  - b) Describe Financing options for Energy efficiency Projects
  - c) Describe an Energy Performance Contract
  - d) Brief describe Force Field Analysis in Energy Management
  - e) Explain Key Elements in Energy Management
- Q.9** Long Question **(10)**
- Write down 'Contents' of a model Detailed Energy audit Report for Industry.
- Q.10** Long Question **(10)**
- Describe (i) Bar or Gantt Chart Method (ii) Critical Path Method and (iii) PERT. Enumerate advantages and disadvantages of these three Project Review techniques.

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