

**M. Arch. Sem-I (Sustainable Architecture) (2014 Course) (CBCS) :
SUMMER - 2019**

SUBJECT: ENERGY MANAGEMENT AND AUDIT

Day: Tuesday
Date: 07/05/2019

Time: 10.00 A.M. TO 12.00 NOON
Max Marks : 60

S-2019-3736

N.B. :

- 1) Solve any **THREE** questions from each section.
- 2) Answer to two sections should be written in **SEPARATE** Answer books.
- 3) Figures to the right indicate **FULL** marks.

SECTION - I

- Q.1** Define or Describe in brief following terms (**Any Five**) **(10)**
- a) Specific Heat, Heat capacity and Calorific value of fuels
 - b) Sensible , Superheat and Latent Heat of Vapourisation
 - c) Commercial and Non-commercial energy
 - d) Secondary energy giving examples
 - e) Potential and Kinetic energy
 - f) Voltage, Current and Power
- Q.2** Write Short Notes on following (**Any Two**) **(10)**
- a) Renewable and Non-Renewable energy with five examples of each
 - b) Energy Conservation and Energy Efficiency with examples of each
 - c) Energy Security vs Energy Independence
 - d) Sector wise Energy consumption in the country
- Q.3** Describe the following (**Any Two**) **(10)**
- a) Write down Aims and Objectives of The Electricity Act 2003
 - b) Write Aims and Objectives of The Energy Conservation Act 2001
 - c) Describe Role, Duties and Responsibilities of Energy Manager in Industry as per The Energy Conservation Act 2001
 - d) Describe Standards & Labeling Scheme of Bureau of Energy Efficiency
- Q.4** Long Question **(10)**
- Differentiate between Energy efficient Buildings and Green Buildings.
Write down List of materials to be particularly selected for Green buildings
- Q.5** Long Question **(10)**
- Describe Salient features of The Energy Conservation Act 2001

SECTION - II

- Q.6** Define or Describe in brief following terms (**Any Five**) **(10)**
- a) Critical Path Method
 - b) PERT
 - c) Energy Audit
 - d) Net Payback Period
 - e) Return on Investment
 - f) Internal Rate of Return

P.T.O.

- Q.7** Write Short Notes on following **(Any Two)** **(10)**
- a) Sector wise Classification of Energy Audits
 - b) Describe typical Detailed Energy Audit Report Format
 - c) Distinguish between Energy Balance and Material Balance
 - d) List down different types of Measurements in Energy Audit of Electrical, Mechanical and Thermal systems
- Q.8** Describe the following **(Any Two)** **(10)**
- a) Describe Project Planning and Implementation of Energy Efficiency Projects
 - b) Briefly explain Shared Savings Energy Performance Contract
 - c) Advantages and limitations of Simple Payback period and Internal Rate of Return methods of Financial Analysis Techniques
 - d) Explain Nature and Contents of Energy Policy
- Q.9** Long Question **(10)**
- Describe Principles and Objectives of Energy Management. Explain Key Elements and Force Field Analysis in Energy Management
- Q.10** Long Question **(10)**
- Describe 10-Step Methodology for conducting Detailed Energy Audit Study

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