

M. ARCH. SEM-I (SUSTAINABLE ARCHITECTURE)
(2014 COURSE) (CBCS) : WINTER - 2017
SUBJECT: ENERGY MANAGEMENT AND AUDIT

Day: **Wednesday**
Date: **06/12/2017**

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

W-2017-3259

N.B.:

- 1) Solve any **THREE** questions from each section.
- 2) Figures to the **RIGHT** indicate full marks.
- 3) Answers to two sections should be written in separate answer book.

SECTION-I

- Q.1** Define or describe in brief following terms: (Any **FIVE**) **[10]**
- a) Contract Demand and Billing Demand
 - b) Apparent Power, Active Power and Reactive Power
 - c) Maximum Demand and Power Factor
 - d) Load Factor and Diversity factor
 - e) Sensible Heat & Latent Heat Fusion
 - f) Primary and Secondary Energy
- Q.2** Write short note on Any **TWO** of the following: **[10]**
- a) Describe Potential Energy and Kinetic Energy and their Four types each
 - b) Describe Single Part Tariff, Two Part and TOD Tariff
 - c) List down the Names of 15 Energy Intensive industries mentioned in the Energy Conservation Act 2001.
 - d) Write a short note on Global Primary Reserves in India and World
 - e) Existing Power Generation scenario in India
 - f) Global Final energy consumption
- Q.3** Describe Any **TWO** of the following: **[10]**
- a) Write down First, Second and Third Laws of Thermodynamics
 - b) Desired Qualifications and Qualities of a good Energy Manager
 - c) Describe Perform, Achieve and Trade Scheme of Bureau of Energy Efficiency
- Q.4** Differentiate between Energy efficient buildings, Green buildings, Eco-friendly buildings and Intelligent buildings **[10]**
- Q.5** Write down Salient features of Energy Conservation Act 2001 and Energy Conservation (Amendment) Act 2010 **[10]**

P.T.O.

SECTION-II

- Q.6** Define the following terms: **[10]**
- a) Simple Payback Period
 - b) Net Payback Period
 - c) Return on Investment
 - d) Net Present Value
 - e) Internal Rate of Return
- Q.7** Write short notes on Any **TWO** of the following: **[10]**
- a) Need for Energy Audit and Various Types of Energy Audit
 - b) Describe Principles and Skills of Energy Management
 - c) Explain Importance of Energy Balance and Material Balance
 - d) List down various types of Measurements in Energy Audits and Instruments used for measurements
 - e) Describe Need, objectives and Contents of Energy Policy for Large industries.
- Q.8** Describe the following (Any **TWO**) **[10]**
- a) Describe Typical Energy Audit Report format
 - b) Describe Steps or Methodology for carrying out Detailed Energy Audit
 - c) Elaborate on the Contracts involved in Project Management of Energy Efficiency Projects
 - d) Project Planning, Implementation and Evaluation of Energy Efficiency Projects
- Q.9** Describe Coverage of a typical Detailed Energy Audit Report. **[10]**
- Q.10** Describe Performance Contracting and Energy Service Company (ESCO) **[10]**

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