

Day: : Wednesday  
Date: 28/11/2018

W-2018-3471

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

**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) Define Potential Energy and give five examples
  - b) Define Voltage, Current, Power and Energy
  - c) Latent Heat of Vapourisation and Enthalpy of Steam
  - d) Explain R/P Ratio for Coal, Oil and Gas Reserves. Write down present values of these three reserves in India
  - e) Types of Fossil fuels and their Calorific value
  - f) Dry bulb and Wet bulb Temperature
- Q.2** Write Short Notes on following (**Any Two**) **(10)**
- a) Describe Potential energy and Kinetic energy. List down their four sub-types
  - b) Write a note on Primary and Secondary energy by giving five examples of each
  - c) Write a Short note on Energy Security and Strategies for future energy requirements in India
  - d) Global Final Energy consumption
- Q.3** Describe the following (**Any Two**) **(10)**
- a) Write down First, Second and Third Law of Thermodynamics
  - b) Write down First and Second Laws of Conservation of Matter
  - c) Primary Energy consumption in India
  - d) Describe Perform, Achieve and Trade (PAT) Scheme of Bureau of Energy Efficiency
- Q.4** Long Question **(10)**
- Explain Energy Efficient Buildings, Green Buildings, Eco-friendly Buildings and Intelligent Buildings. Also write down Scope and Coverage of ECBC-2007
- Q.5** Long Question **(10)**
- Write down Salient features of Energy Conservation Act 2001 and The Energy Conservation (Amendment) Act 2010

**SECTION - II**

- Q.6** Define or Describe in brief following terms (**Any Five**) **(10)**
- a) Simple Payback Period
  - b) Net Payback Period
  - c) Return on Investment
  - d) Net Present Value
  - e) Internal Rate of Return
  - f) Energy Service Company (ESCO)

**P.T.O.**

**Q.7** Write Short notes on following (**Any Two**) (10)

- a) Need for Energy Audit and various Types of Energy Audits
- b) Write down List of various Instruments used for Energy Audit
- c) Explain Importance of Material Balance and Energy Balance
- d) List down various types of Measurements in Energy Audits and Instruments used for measurements

**Q.8** Describe the following (**Any Two**) (10)

- a) List down types of External Sources of Funding Energy Efficiency Projects
- b) Describe Strategy for Successful Energy Management
- c) Describe ISO 50001 : 2011 – Energy Management System (EnMS)
- d) Describe Energy Policy for Industries

**Q.9** Long Question (10)

Briefly describe Key Elements and Force Field Analysis of Energy Management. Write down at least Ten Responsibilities and Duties of Energy Manager

**Q.10** Long Question (10)

Describe different Types of Contracts used in Energy Efficiency Project Management. Explain Financing Options for Energy Efficiency Projects

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