Printed Pages—3 EEE054

(Following Paper ID and Roll No. to be filled in your Answer Book)

PAPER ID : 121858 Roll No

B.Tech.

(SEM. VIII) THEORY EXAMINATION 2013-14

ENERGY EFFICIENCY AND CONSERVATION

Time : 3 Hours *Total Marks : 100*

Note :– Attempt **all** questions. All questions carry equal marks

1. Attempt any **two** parts of the following : **(10×2=20)**
   (a) Discuss the principle of energy conservation. What are the advantages and disadvantages of energy conservation ?
   (b) What do you mean by "Energy Conservation in small scale industries and large scale industries" ? Explain in detail.
   (c) What do you understand by "STRATEGY OF ENERGY AUDIT" ? Discuss the aim of energy audit.
2. Attempt any **two** parts of the following : **(10×2=20)**
   (a) Write short notes on the following :
      (i) Energy audit of Electrical systems.
      (ii) HVAC
   (b) Discuss the concept and scope of demand side management. What are advantages and disadvantages of demand side management ?
   (c) Write short notes on the following :
      (i) DSM Strategy
      (ii) Evolution of Demand Side Management.

3. Attempt any two parts of the following : **(10×2=20)**
   (a) What do you understand by "national and international experiences with DSM" ? Explain in detail.
   (b) What do you understand by "VOLTAGE PROFILES" in power system environments ? What are the different methods for improvement of voltage profiles in power system environments ?
   (c) Explain the following :
      (i) VAR requirements and Power factor
      (ii) Voltage drop calculations.
4. Attempt any **two** parts of the following : **(10×2=20)**
   (a) Discuss the working principle and equivalent circuit of VAR control devices in power system networks. What are the features followed by VAR control devices in power system networks ?
   (b) Explain the following :
      (i) Capacitors units and bank rating
      (ii) Protection of capacitors and switching.
   (c) What do you mean by "Voltage Instability" in power system networks ? What are the various causes of voltage instability in power system networks ? How it is improved in power system networks ?
5. Attempt any **two** parts of the following : **(10×2=20)**
   (a) What do you mean by "Energy efficient motors" ? What are the special features associated with such motors ?

(b) Write short notes on the following :

(i) Energy efficient windows

(ii) Distribution Code and Electricity Bill 2003.

(c) Explain the following :

(i) Load scheduling/shifting

(ii) Day lighting timers

(iii) Indian Electricity Act 1956

(iv) UPS Selection.