Code No: **R41025** **R10** **Set No. 1**

**IV B.Tech I Semester Regular/Supplementary Examinations, Nov/Dec - 2015**

# ENERGY AUDIT, CONSERVATION & MANAGEMENT

**(Open Elective)**

**Time: 3 hours** **Max. Marks: 75**

**Answer any FIVE Questions**
**All Questions carry equal marks**
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| | | | |
|---|---|---|---|
| 1 | a) | What is energy audit? What are the different types of audit? | [8] |
| | b) | What is a load profile? Explain about different types of load profile. | [7] |
| 2 | a) | Explain clearly about principles of energy management. | [8] |
| | b) | Discuss the qualities and functions of an energy manager. | [7] |
| 3 | a) | Explain the term luminous efficiency. | [7] |
| | b) | How the existing lighting system is replaced for the improvement? | [8] |
| 4 | a) | Compare the features of static capacitor and synchronous condenser used for power factor correction. | [8] |
| | b) | Discuss the effect of non linear loads on power factor. | [7] |
| 5 | a) | Explain the principle of operation of a watt-hour meter. | [8] |
| | b) | Discuss the applications of power analyzer. | [7] |
| 6 | a) | Discuss the energy conservation aspects in air conditioning system. | [8] |
| | b) | Discuss the principles used in space heating methods. | [7] |
| 7 | a) | Discuss the principle of life cycle costing analysis with an example. | [8] |
| | b) | Discuss the concept of energy efficient motors. | [7] |
| 8 | a) | Discuss the disadvantages of energy efficient lighting systems. | [8] |
| | b) | Discuss the disadvantages of energy efficient motors. | [7] |

Code No: **R41025** **R10** **Set No. 2**

**IV B.Tech I Semester Regular/Supplementary Examinations, Nov/Dec - 2015**

# ENERGY AUDIT, CONSERVATION & MANAGEMENT

**(Open Elective)**

**Time: 3 hours** **Max. Marks: 75**

**Answer any FIVE Questions**
**All Questions carry equal marks**
*********

| | | | |
|---|---|---|---|
| 1 | a) | What is an energy audit? Explain the significance of energy audit. | [8] |
| | b) | Explain the terms energy index and cost index with examples. | [7] |
| 2 | a) | Discuss the planning aspects of energy management program. | [8] |
| | b) | Discuss the controlling aspects of energy management. | [7] |
| 3 | a) | Explain the significance of polar curve. | [8] |
| | b) | Discuss the principle of operation of a fluorescent tube light. | [7] |
| 4 | a) | Discuss the vector diagram for a system where capacitor improves the power factor. | [8] |
| | b) | Define harmonics. Discuss the effect of harmonics on the system power factor. | [7] |
| 5 | a) | Discuss the principles of operation of a data logger. | [8] |
| | b) | Discuss the applications of a tong tester. | [7] |
| 6 | a) | Discuss the different space heating methods. | [8] |
| | b) | Discuss the energy efficient water heating systems. | [7] |
| 7 | a) | Discuss the principle of present worth method with an example. | [8] |
| | b) | Discuss the merits and demerits of time value of money. | [7] |
| 8 | a) | Discuss the technologies adopted in energy efficient lighting systems. | [8] |
| | b) | Explain the concept return on investment. | [7] |

Code No: **R41025** **R10** **Set No. 3**

**IV B.Tech I Semester Regular/Supplementary Examinations, Nov/Dec - 2015**

# ENERGY AUDIT, CONSERVATION & MANAGEMENT

**(Open Elective)**

**Time: 3 hours** **Max. Marks: 75**

**Answer any FIVE Questions**
**All Questions carry equal marks**
*********

| | | | |
|---|---|---|---|
| 1 | a) | Explain the energy audit in the perspective of educational institution. | [8] |
| | b) | Explain the significance of pie-chart. | [7] |
| 2 | a) | Discuss the principles of energy management. | [8] |
| | b) | Explain the functions of energy manager. | [7] |
| 3 | a) | Discuss the principle of operation of a LED light with diagrams. | [8] |
| | b) | Compare the features of incandescent lamp and fluorescent lamp. | [7] |
| 4 | a) | Explain the procedure for location of capacitors for improvement of power factor. | [8] |
| | b) | What is a synchronous condenser? Explain its application for improvement of the power factor. | [7] |
| 5 | a) | Explain the principle of operation of a thermo couple. | [8] |
| | b) | Explain the applications of a pyrometer. | [7] |
| 6 | a) | Discuss the principle of air conditioning. | [8] |
| | b) | Discuss the energy conservation aspects in ventilation of a house. | [7] |
| 7 | a) | Explain rate of return method with an example. | [8] |
| | b) | Discuss the merits and demerits of time value of money. | [7] |
| 8 | a) | Discuss one application of life cycle costing analysis. | [8] |
| | b) | Discuss the advantages of energy efficient motors. | [7] |

Code No: **R41025** **R10** **Set No. 4**

**IV B.Tech I Semester Regular/Supplementary Examinations, Nov/Dec - 2015**

# ENERGY AUDIT, CONSERVATION & MANAGEMENT

**(Open Elective)**

**Time: 3 hours** **Max. Marks: 75**

**Answer any FIVE Questions**
**All Questions carry equal marks**
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1 a) Explain the advantages of energy audit. [8]

b) List the types of energy conservation methods and discuss their merits and demerits. [7]

2 a) What is an energy management? Explain the importance of energy management. [8]

b) Discuss the qualities of a top management. [7]

3 a) Discuss about the flood lighting scheme. [8]

b) Discuss about conservation measures in lighting schemes. [7]

4 a) Explain the necessity for improvement of the power factor. [8]

b) Discuss the application of static capacitors for improvement of the power factor. [7]

5 a) Discuss the principle of operation of a pyrometer. [8]

b) Explain the principle of operation of a Lux meter. [7]

6 a) Discuss the various principles used in the heating of buildings. [8]

b) Discuss the energy conservation aspects associated with heating in buildings. [7]

7 a) What is time value of money? Explain with an example. [8]

b) Explain the applications of rate of return method. [7]

8 a) Discuss the features of energy efficient motors. [8]

b) Discuss the qualities of an energy efficient lighting. [7]