

**B.TECH**  
**(SEM-VIII) THEORY EXAMINATION 2017-18**  
**ENERGY MANAGEMENT**

*Time: 3 Hours**Total Marks: 100***Note:** 1. Attempt all Sections. If require any missing data; then choose suitably.**SECTION A**

- 1. Attempt *all* questions in brief. **2 x 10 = 20****
- a. What is meant by energy?
  - b. What is GDP?
  - c. What is the need of energy audit in an industry?
  - d. What is availability analysis?
  - e. List out any two objectives of energy management.
  - f. What is meant by energy transmission?
  - g. What is meant by power factor improvement?
  - h. What is the advantage of power factor improvement?
  - i. What is greenhouse effect?
  - j. Explain ozone layer depletion in brief.

**SECTION B**

- 2. Attempt any *three* of the following: **10 x 3 = 30****
- a. Write short notes on:
    - i) Energy demand analysis
    - ii) Energy pricing
  - b. How can mass and energy be balanced in system? Explain in detail. What is meant by energy conservation opportunities (ECOs)?
  - c. Discuss various energy optimization models for plants. How is the data collected and managed for energy sector?
  - d. Explain the need and methodology for electrical energy conservation in building lighting, heating and ventilating.
  - e. Write short notes on:
    - i) Global warming
    - ii) Environmental issues

**SECTION C**

- 3. Attempt any *one* part of the following: **10 x 1 = 10****
- (a) What is Energy? What are the different forms of energy available? Explain in detail.
  - (b) Write the salient features of National Energy Plan. Discuss the trade of between energy and environment.
- 4. Attempt any *one* part of the following: **10 x 1 = 10****
- (a) What is meant by energy audit? Discuss different types of energy audit.
  - (b) What is "Life cycle cost analysis"? How is it different from simple pay-back method? Also mention the applications of life cycle cost analysis.

- 5. Attempt any *one* part of the following: **10 x 1 = 10****
- (a) Explain the difference between continuous supply system and discontinuous supply system. Also explain the battery storage system.
  - (b) Explain computer aided management system. How it leads to better energy conservation?
- 6. Attempt any *one* part of the following: **10 x 1 = 10****
- (a) What is meant by industrial wastes? List some methods of industrial waste utilization.
  - (b) What is meant by green buildings? Discuss energy conservation in air-conditioning of buildings.
- 7. Attempt any *one* part of the following: **10 x 1 = 10****
- (a) How is the production and use of energy related to the economy of a country? What are various regulations laid down by the government for conservation of environment?
  - (b) Discuss the effect of CO and SO<sub>x</sub> on human health. How can we control the emission of SO<sub>x</sub> generated from combustion of fuels?