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B TECH
(SEM-VII) THEORY EXAMINATION 2021-22
ENERGY EFFICIENCY & CONSERVATION

Time: 3 Hours
70

Total Marks:

Note: 1. Attempt all Sections. If require any missing data; then choose suitably.

SECTION A

1. Attempt all questions in brief.

2 x 7 = 14

- a. What is Indian Electricity act 1956
- b. Write short note on energy Efficiency
- c. What do you mean by load scheduling and load shifting?
- d. What is the role of reactive power in electrical energy consumption?
- e. What is need of Demand Side planning?
- f. Show the benefits of demand forecasting.
- g. What do you mean by Energy Audit?

SECTION B

2. Attempt any three of the following:

7 x 3 = 21

- a. What are the instruments for energy audit? Also explain the energy audit of electrical system
- b. What do you mean by “ENERGY CONSERVATION LEGISLATION”? Also explain the strategy of energy audit
- c. Explain DSM Strategy, its implementation and application
- d. Explain Efficiency in Motors and Lighting system. Discuss energy efficient motors
- e. Discuss the method of voltage and reactive power control systems. Also mention its importance in power system environments

SECTION C

3. Attempt any one part of the following:

7 x 1 = 7

- (a) Explain the principle of Energy Conservation. What are the advantages and disadvantages of Energy Conservation?
- (b) Explain the energy Conservation in small scale and large scale industries.

4. Attempt any one part of the following:

7 x 1 = 7

- (a) Write short note on following:
 - i) Energy audit of HVAC system
 - ii) Energy Audit of Electrical Systems
- (b) Illustrate the energy audit of building in detail

5. Attempt any one part of the following:

7 x 1 = 7

- (a) Describe in detail about the national and international experiences with demand side management
- (b) Narrate the evolution of demand side management in detail

6. Attempt any one part of the following:

7 x 1 = 7

- (a) What is the need of installing capacitor banks and inductor banks in distribution systems? Explain their advantages and limitations.
- (b) What do you mean by “Voltage Instability” in power systems networks? How it is improved?

7. Attempt any one part of the following:

7 x 1 = 7

- (a) Explain the following:- (i) UPS selection (ii) Indian Electricity Act 1956
- (b) Write short note on Energy efficient motors and compare it with standard motors