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R-15

Code: 5G286

IV B.Tech. II Semester Advanced Supplementary Examinations October 2020

Energy Auditing and Demand side Management

(Electrical and Electronics Engineering)

Max. Marks: 70

Time: 3 Hours

Answer *all five* units by choosing one question from each unit (5 x 14 = 70 Marks)

	Marks	CO	Blooms Level
UNIT-I			
1. a) Explain energy audit and different types of energy audit.	7M		3
b) Explain pie-chart, Sankey diagrams and Load profiles.	7M		4
OR			
2. a) Explain in detail about energy conservation act.	7M		3
b) Write about energy codes, standards and Legislation.	7M		2
UNIT-II			
3. a) Explain the constructional details of energy efficient motors.	7M		4
b) Explain any two methods to improve power factor.	7M		3
OR			
4. a) Explain effect of Power factor with linear & non linear loads.	7M		3
b) Explain the disadvantages of low power factor in an electrical system from the consumer point of view.	7M		4
UNIT-III			
5. a) Write short notes on: (i) Good lighting system design. (ii) Lighting energy audit.	7M		3
b) Write different applications of PLC's	7M		4
OR			
6. a) Explain about Energy Instruments of Tongue tester & data logger.	7M		4
b) Explain principle and operation of lux meter and also write its applications.	7M		4
UNIT-IV			
7. a) Explain in detail about the time value of money concept.	7M		2
b) Explain different steps to develop cash flow models.	7M		3
OR			
8. a) What is depreciation and Explain various depreciation methods in detail.	7M		3
b) Explain pay back analysis. Mention its advantages and disadvantages.	7M		4
UNIT-V			
9. a) Discuss management and organization of energy conservation awareness program.	7M		3
b) Explain the concepts of DSM and benefits of DSM.	7M		4
OR			
10. a) Explain time of day tariff for DSM implementation.	7M		3
b) Explain i) valley filling ii) peak clipping iii) peak shifting of energy management.	7M		3

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Marks CO Blooms Level

UNIT-I

1. a) What is energy index and How is it calculated explain its use
- b) Define & Explain pie-chart, Sankey diagrams.

7M

2

7M

4

OR

2. a) Explain in detail about energy conservation schemes.
- b) Explain different the types of energy audit.

7M

4

7M

2

UNIT-II

3. a) Explain the characteristics of energy efficient motors.
- b) Explain about variable speed and variable duty cycle systems in energy efficient motors.

7M

4

7M

3

OR

4. a) What is the role of power factor on system performance and Explain the effects of harmonics on power factor.
- b) Explain method for the location of capacitors.

7M

4

7M

3

UNIT-III

5. a) Explain about good lighting system design and practice.
- b) Explain light energy audit and energy instruments required for the audit.

7M

3

7M

4

OR

6. a) Explain about Energy Instruments of Watt Meter & Thermocouple.
- b) Explain about Energy Instruments of Tongue tester & Pyrometers.

7M

4

7M

4

UNIT-IV

7. a) Explain in detail about the time value of money concept and taxes and its credit.
- b) Explain pay back analysis. Mention its advantages and disadvantages.

7M

2

7M

3

OR

8. a) Explain various depreciation methods and write its advantages and disadvantages.
- b) Explain different steps to develop cash flow models.

7M

3

7M

4

UNIT-V

9. a) Discuss management and organization of energy conservation awareness program.
- b) Explain various steps in DSM planning and implementation with relevant flow diagrams.

7M

4

7M

5

OR

10. a) With neat diagram explain plant level organization to implement DSM.
- b) Explain
 - i) Vally filling ii) peak clipping iii) strategic energy conservation.

7M

2

7M

4
