

Reg. No.

Question Paper Code

11587

M.E. - DEGREE EXAMINATIONS, NOV/DEC 2022

Third Semester

M.E. - Power Electronics and Drives

20PPEEL306 - ENERGY MANAGEMENT AND AUDITING

(Regulations 2020)

Duration: 3 Hours

Max. Marks: 100

**PART - A (10 × 2 = 20 Marks)**

Answer ALL Questions

- |   | <i>Marks,<br/>K-Level, CO</i> |
|---|-------------------------------|
| 1. Compare contracted demand & amp billing demand.                          | 2,K2,CO1                      |
| 2. Write the types of energy sources.                                       | 2,K1,CO1                      |
| 3. Compare micro and macro economics.                                       | 2,K2,CO2                      |
| 4. Why energy management system is required in HVAC?                        | 2,K1,CO2                      |
| 5. Give the advantages of energy efficient motors.                          | 2,K1,CO3                      |
| 6. What are the reasons for loss in efficiency, in rewind induction motors? | 2,K1,CO3                      |
| 7. What are the types of instrument transformers used in HT Line?           | 2,K1,CO4                      |
| 8. Why secondary of the current transformer in short circuited?             | 2,K1,CO4                      |
| 9. What is co-generation?   | 2,K1,CO5                      |
| 10. List the types of co-generation.  | 2,K1,CO5                      |

**PART - B (5 × 13 = 65 Marks)**

Answer ALL Questions

11. a) Describe the needs of energy planning and audit. 13, K2,CO1
- OR**
- b) Write down the steps involved in Energy management Strategy? 13, K1,CO1
12. a) Describe the operation of the different types of automatic controllers. 13, K2,CO2
- OR**
- b) Explain the various time value factors with an example. 13, K2,CO2
13. a) Discuss the various induction heating methods. 13, K2,CO3
- OR**
- b) Briefly discuss the energy saving recommendations for the synchronous machines. 13, K2,CO3

K1 – Remember; K2 – Understand; K3 – Apply; K4 – Analyze; K5 – Evaluate; K6 – Create

**11587**

14. a) Describe the various metering techniques with practical examples. 13, K2, CO4

**OR**

b) Briefly explain the importance of meter location and requirement in energy management. 13, K2, CO4

15. a) What is meant by co-generation? Explain with suitable example any one of methods of co-generation in detail. 13, K2, CO5

**OR**

b) Illustrate in detail about the feasibility of cogeneration. 13, K2, CO5

**PART - C (1 × 15 = 15 Marks)**

16. a) What are the typical cost factors included in Energy management and Auditing and explain each in detail? 15, K2, CO5

**OR**

b) Describe in detail about the Fluorescent lamp and also discuss the energy saving opportunities. 15, K2, CO5