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Question Paper Code: 59324

B.E./B.Tech. DEGREE EXAMINATION, MAY 2022

Elective

Electrical and Electronics Engineering

15UEE924- ENERGY AUDIT

(Regulation 2015)

Duration: Three hours

Maximum: 100 Marks

Answer All Questions

PART A - (5x 3 = 15 Marks)

1. Explain the major differences between preliminary audit and detailed energy audit. CO1- U
2. Justify why low-pressure steam is preferred for indirect heating. CO2- U
3. Differentiate fans, blowers and compressors. CO3- U
4. List three energy saving measures in lighting system. CO4- U
5. Mention the compensators commonly used for energy analysis. CO5- U

PART – B (5 x 14 = 70 Marks)

6. (a) What is meant by energy audit? Explain the economics of various energy conservation schemes. CO1-U (14)

Or

- (b) Explain the key elements of energy monitoring and targeting system. CO1 -U (14)

7. (a) There is a steam boiler in a thermal power plant, mettur. To conserve the energy what are the steps to be taken? Explain in detail. CO2 -U (14)

Or

- (b) Illustrate the energy conservation measures to be followed in a steam system. CO2 -U (14)

8. (a) (i) Discuss the energy saving opportunities in compressors to enhance the energy efficiency. CO3-U (7)

(ii) Consider a fan to draw air through a bag filter. For this case, discuss the steps to be followed for energy conservation. CO3-U (7)

Or

(b) Explain the energy conservation of centrifugal pumps with a case study. CO3- U (14)

9. (a) Explain the Energy conservation in cooling towers. CO4-U (14)

Or

(b) List various energy savings opportunity in the municipal lighting systems. CO4 -U (14)

10. (a) Explain the losses in boilers and also briefly discuss the boiler controls. CO5- U (14)

Or

(b) Discuss the need for proportional, integral and differential optimizers for energy analysis. CO5- U (14)

PART – C (1 x 15 = 15 Marks)

11. (a) Analyze the design considerations of an air compressor for energy conservation. CO3-App (15)

Or

(b) In your college you want to conserve energy consumed by fans. What are the measures you will take for the same? CO3-App (15)