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**Question Paper Code:59324**

B.E./B.Tech. DEGREE EXAMINATION, DEC 2021

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. How do you define 'Final Energy Consumption'? CO1- U
2. What are the ways of reduction of steam usage? CO2- U
3. What are affinity laws governing fan performance in terms of speed, power and pressure? CO3- U
4. Define one 'Ton of Refrigeration (TR)'. CO4- U
5. What are the principle heat losses that occur in a boiler? CO5- U

PART – B (5 x 14 = 70Marks)

6. (a) Explain in detail the methodology for conducting a detailed energy audit. CO1-U (14)
- Or
- (b) Mention some of the long-term energy strategies available for the better energy secured nation CO1 -U (14)

7. (a) Describe 'chain grate' and 'spreader stoker' type boiler with neat diagram. CO2 -U (14)
- Or
- (b) What are the important guidelines for proper drainage and layout of steam lines? CO2 -U (14)
8. (a) List out the major components of air compressor. Give the requirements for efficient operation of compressed air Systems. CO3- U (14)
- Or
- (b) Explain the simple method of capacity assessment of air compressors. CO3- U (14)
9. (a) What is the effect of change in heat load on cooling tower performance? CO4-U (14)
- Or
- (b) Explain the principle of 'vapour compression' system with a neat sketch? CO4 -U (14)
10. (a) Explain the different external water treatment methods. CO5- U (14)
- Or
- (b) Evaluate the option of boiler replacement for the following boiler with a new boiler of 84% efficiency. The cost of new boiler is Rs. 30.00 lakh CO5- Ana (14)

PART – C (1 x 15 = 15Marks)

11. (a) Explain in brief the "position of energy manager" and "Energy committee" in an organization? In your own words, explain what do you expect as support from top management. CO3-App (15)
- or
- (b) Describe about 5 items each of responsibilities and duties of Energy Manager as assigned under The Energy Conservation Act, 2001? CO3-App (15)