

~~M. S. Srinivas~~  
 Evening  
 D: 16/05/2014

GANPAT UNIVERSITY  
 B.TECH SEM-VI (ELECTRICAL)  
 REGULAR EXAMINATION MAY-2014  
 2EE61E: ELECTIVE-I (2EE611: ENERGY AUDIT & MANAGEMENT)

Time: 3 Hours

Total Marks:-70

- Instructions: - 1. Attempt all questions.  
 2. Make suitable assumptions wherever necessary.  
 3. Figures to the right indicate full marks.

SECTION-I

- Q:1 (A) Discuss ten steps methodology for detailed energy audit. (6)  
 (B) Explain various methods to find motor loading. (6)

OR

- Q:1 (A) Discuss performance evaluation of rewind motor (6)  
 (B) List and explain energy audit instruments. (6)

- Q:2 (A) What do you mean by energy efficient motors? Differentiate between conventional and energy efficient motors. Explain the ways by which efficiencies of energy efficient motors are increased. (5)  
 (B) Draw and explain the block diagram of variable speed drive for industrial applications in detail (6)

OR

- Q:2 (A) Discuss the importance of financial analysis. And explain simple payback period method. (5)  
 (B) A proposed a project requires an initial investment of 25,000/-. The cash flows generated by the project are shown in the below table: (6)

Year	Cash Flow(Rs)
1	+6,000
2	+5,500
3	-2,000
4	+4,000
5	-1,000

Find the internal rate of return for the project.

- Q:3 Attempt any two: (12)
- (A) Explain citing proper justifications that "Energy Efficiency and Energy Conservation are different but related terms".
- (B) What is the significance of maximum demand in electrical system? Explain the step by step approach of controlling the maximum demand of any electrical system.
- (C) What is the role of ballast in electric circuit? Compare the electronic ballast with the conventional ballast. Also mention the advantaged of the same.

## SECTION-II

- Q:4 (A) Comment with proper justifications that "Economic growth is linked to energy consumption". (6)  
(B) Explain ozone layer depletion problem? State the effects of ozone layer depletion. (6)
- OR**
- Q:4 (A) What do you understand by term "COP" and explain its role? (6)  
(B) Define (6)  
(i) Latent of vaporization (ii) sensible heat (iii) Btu (iv) Humidity (v) Tariff
- Q:5 (A) Define the following with respect to Illumination. (6)  
(i) Illuminance (ii) Lux (iii) Luminous efficiency (iv) Colour Rendering Index  
(B) A fluorescent tube light consumes 40 W for the tube and 10 W for chock. If the lamp operates for 8 hours a day for the whole year. Calculate the total energy cost for the year if the energy cost is Rs. 3/- per kWh. (5)
- OR**
- Q:5 (A) Comment on role of BEE in the energy sector reforms in India. (6)  
(B) What is the main role of UNFCCC? Explain in details. (5)
- Q:6 **Attempt any two:**  
(A) What are the causes of low power factor? Mention the disadvantages of low power factor. Also suggest the remedies to improve the power factor? (6)  
(B) Classify the various forms of energy with examples of each. (6)  
(C) What is Kyoto protocol, and what are its implications for developed and developing countries?

**END OF PAPER**

**Best of Luck**