

**GUJARAT TECHNOLOGICAL UNIVERSITY**  
**ME- SEMESTER II- EXAMINATION – SUMMER 2015**

**Subject Code: 2724510****Date: 03/06/ 2015****Subject Name: ENERGY EFFICIENT ELECTRICAL SYSTEM****Time: 2:30 PM – 5:00 PM****Total Marks: 70****Instructions:**

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

- Q.1** (a) Explain why power is generated at lower voltage and transmitted at higher voltages? **07**  
(b) Define contract demand and billing demand. **07**
- Q.2** (a) What are the managerial functions involved in energy management? **07**  
(b) Explain the role of training and awareness in energy management programme. **07**
- OR**
- (b) What are the benefits of benchmarking energy consumption? **07**
- Q.3** (a) What do the following terms mean? **07**  
1) Illuminance  
2) Luminous efficacy  
3) Luminaire  
4) Control gear  
5) Colour rendering index  
(b) What are the types of commonly used lamps? **07**
- OR**
- Q.3** (a) Briefly describe the methodology of lighting energy audit in an industrial facility. **07**  
(b) Explain briefly about various lighting controls available? **07**
- Q.4** (a) Describe the various methods by which you calculate motor loading. **07**  
(b) What are the limitations of slip method in determining motor loading? **07**
- OR**
- Q.4** (a) Explain variable speed drives with suitable example. **07**  
(b) Give the difference between classical drive and variable speed drive. **07**
- Q.5** (a) Explain the principle of automatic power factor controller. **07**  
(b) Explain how maximum demand control works with suitable example. **07**
- OR**
- Q.5** (a) What are the advantages of energy efficient motors? **07**  
(b) Explain why centrifugal machines offers the greatest savings when used with Variable Speed Drives. **07**

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