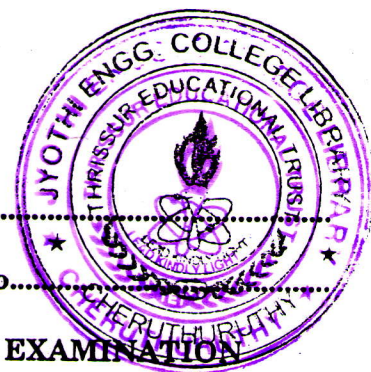


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Name.....

Reg. No.....



EIGHTH SEMESTER B.Tech. (ENGINEERING) DEGREE EXAMINATION
MAY/JUNE 2007

PTEE 2K 803(A)/EE 2K 805(A)—ELECTRICAL SYSTEM DESIGN AND ESTIMATION

Time : Three Hours

Maximum : 100 Marks

*Answer five full questions.
Assume any missing data suitably*

Part A

1. (a) Write a note on electric supply systems.
- (b) Explain any *two* types of light sources with example and compare.
- (c) How the location for distribution and panel board are selected ?
- (d) Explain the need and principle of lightning arresters.
- (e) What are the technical considerations in a lift powering task ?
- (f) What are the precautions for the electrification of high rise buildings ?
- (g) What is shielding of electrical systems ? What is the need ? How it is done ?
- (h) Write a note on earth-mat design.

(8 × 5 = 40 marks)

Part B

2. (a) Compare over the head and under ground distribution schemes. (7 marks)
 - (b) Explain the criteria for selecting HT underground cables. (8 marks)
- Or*
3. (a) What is service main ? Explain the different types in detail. (10 marks)
 - (b) Explain the need and role of national electrical code for installation. (5 marks)
 4. (a) With the help of a diagram explain the working of any *one* photometer. (7 marks)
 - (b) Explain the point to point and light flux methods of lighting calculations. (8 marks)

Or

5. (a) In a step by step manner, explain the electrical aspects and considerations in the electrical installation of a cinema theatre. (7 marks)
- (b) Define energy efficiency of a lamp. Mention the methods for improving it. (8 marks)
6. (a) With the help of an arbitrary schematic diagram and layout, explain the steps estimating the total cost for a house wiring. (8 marks)

(8 marks)
Turn over

- (b) What are the components in main and distribution boards ? How their specifications are arrived at for a building like an SSI unit.

(7 marks)

Or

- (a) What is lightning protection ? How it is achieved ?

(6 marks)

- (b) Explain the CTS system of internal wiring. Explain the terms number and capacity of outlets. How the total cost estimate is done ?

(9 marks)

- (a) Give a total description of earthing system in a substation. Give the design steps of plate and pipe earthing. Mention the factors that affect earth resistance.

(10 marks)

- (b) Differentiate between indoor and outdoor substations.

(5 marks)

Or

- (a) Draw the diagrams of transmission line towers of 110 KV. Give the main dimensions and justify the selection.

(7 marks)

- (b) Give the plan, material list and cost estimate for the installation of a distribution transformer.

(8 marks)