C 1058

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Name....................................

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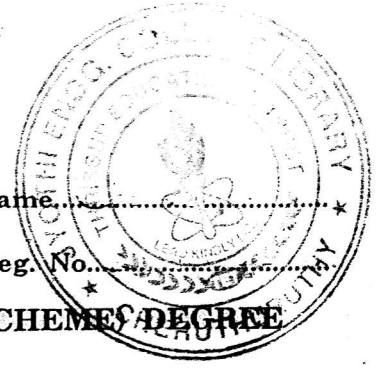
EIGHTH SEMESTER B.TECH. [ENGINEERING] (09 SCHEME) DEGREE EXAMINATION, APRIL 2016

EE/PTEE 09 801—ELECTRICAL SYSTEM DESIGN

Time : Three Hours   Maximum : 70 Marks

Part A

Answer all questions.

1. Write down the functions of VCB and ELCB.

2. Why silver is preferred as a fuse element inspite of its higher cost ?

3. Define demand factor.

4. What do you understand by substation ?

5. What is called colour rendering.

(5 × 2 = 10 marks)

Part B

Answer any four questions.

6. Discuss the advantages and disadvantages of a fuse.

7. Explain the following terms in connection with fuse :

    (a) Rated current.

    (b) Fusing factor.

    (c) Fusing current.

    (d) Cut-off current.

8. What are the factors to be considered for the selection of LT cables ?

9. Distinguish between power transformer and distribution transformer.

10. What is meant by stroboscopic effect ? How it can be overcome.

11. Distinguish between direct and indirect lighting.

(4 × 5 = 20 marks)

Part C

Answer all questions.

12. What are the different types of fuses ? Discuss with a neat sketch the construction and working principle of a HRC fuse.

Or

13. What is meant by earthing ? Explain the design of pipe earthing with neat diagram.

Turn over

14. What are the causes of low power factor in electric supply system ? Explain automatic power factor correction method in detail.

Or

15. Explain in detail about paralleling of UPS system.

16. What are the different types of substations ? Draw the single line diagram of any one type of substation and list down the various equipments used in that substation.

Or

17. Draw the elevation of an H pole mounted substation and show all the equipments required.

18. A workshop measuring 15 m × 36 m is illuminated by 20 lamps of 500 watts each. The luminous efficiency of each lamp is 15 lumens per watt. Allowing a deprecation factor of 0.7 and coefficient of utilization of 0.5 determine the illumination on the working plane.

Or

19. A lamp having a uniform candle power of 300 in all directions is provided with a reflector which directs 50% of total light uniformly on to a circular table of 3m diameter. The lamp is hung 3m above the table. Calculate the illumination (a) at centre ; (b) at the edge of the table.

(4 × 10 = 40 marks)