



C09-EE-404

3476

BOARD DIPLOMA EXAMINATION, (C-09)

OCT/NOV—2013

DEEE—FOURTH SEMESTER EXAMINATION

ELECTRICAL INSTALLATION AND ESTIMATION

Time : 3 hours]

[Total Marks : 80

PART—A

Instructions : (1) Answer **all** questions.

(2) Each question carries **three** marks.

(3) Answer should be brief and straight to the point and shall not exceed *five* simple sentences.

1. Write the major steps involved in solving the problems on power load.
2. Draw the wiring diagram for series-parallel connections of lamps.
3. Draw a neat sketch of incandescent lamp and name the parts.
4. Write the main components of overhead transmission line.
5. Write the classifications of earthing systems based on the applications.
6. State the materials required for erecting the 100 kVA, 11 kV/400 volts distribution transformer.

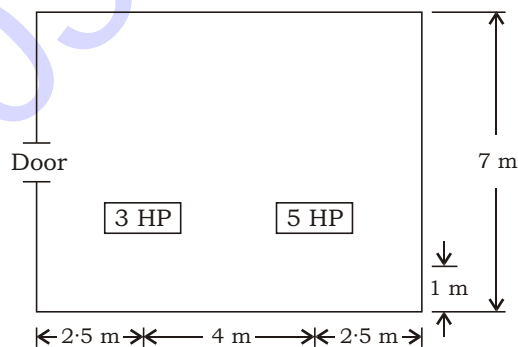
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7. What are the important tests to be conducted before energizing a domestic wiring installation?
8. State I.E. Rule 33 regarding earthed terminal on consumer's premises.
9. Briefly write the cause for overheating of power transformer.
10. What is meant by staggering of brushes?

PART—B

- Instructions :** (1) Answer *any five* questions.
(2) Each question carries **ten** marks.
(3) Answers should be comprehensive and the criterion for valuation is the content but not the length of the answer.

11. Two 400-V, 3- induction motors are to be installed in a workshop as shown in the figure :



Prepare a schedule with quantity of material and its approximate cost. [Assume missing data, if any]

12. A domestic wiring installation comprises of 5 lamps of 60 W, 3 fans of 80 W and 3 light sockets of 100 W. Calculate the subcircuits and specify the load in each circuit, and prepare the estimation schedule for this material.

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- 13.** Draw the wiring layout for big office building with necessary latest facilities like air-conditioner, LCD projector, meeting hall with PA system, etc.
- 14.** Estimate the quantity of materials required for a 11-kV overhead line for a length of 3.5 km with an assumption of 60 m span, with 7/2.59 sq. mm ACSR conductor and 2 cut points in the line.
- 15.** Draw a neat sketch of plinth mounted substation and name the parts.
- 16.** The load particulars of the villages are given below :
- (i) Agricultural load—20 HP
 - (ii) Domestic load each 1000 W—60 nos.
 - (iii) Small-scale industries load each 4 kW—3 nos.
 - (iv) Commercial load—6 kW
- Determine the rating of the transformer to be installed in the load centre and estimate the quantity of materials required. [Assume suitable diversity factor]
- 17.** (a) Estimate the materials required for plate earthing.
(b) State the important I.E. Rules in electrical supply and distribution system.
- 18.** (a) State the function of brushes and their requirements.
(b) What is the role of maintenance engineer?

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