



C09-EE-404

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BOARD DIPLOMA EXAMINATION, (C-09)

APRIL/MAY—2015

DEEE—FOURTH SEMESTER EXAMINATION

ELECTRICAL INSTALLATION AND ESTIMATION

Time : 3 hours]

[Total Marks : 80

PART—A

3×10=30

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

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

(3) Answers 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 neatly MA-type mercury-vapour lamp and identify its parts.
3. Draw the wiring diagram to control one lamp from two different locations.
4. Write the main components of overhead line of transmission and mention their functions.
5. Brief the purpose of earthing in electrical installation.
6. State different ratings of transformers used for plinth-mounted substations.

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7. State any two ^{*} IE rules for earthing metal supports of overhead distribution line.
8. Specify the value of earth resistance to be maintained for a given electrical installation :
- (a) Large power station
 - (b) Major substation
 - (c) Small substation
9. What is meant by staggering of brushes?
10. State the causes of overheating of power transformer.

PART—B

10×5=50

- 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. Prepare the quantity of materials for an agricultural pump set of 5.5 kW, 3- and 400 V squirrel-cage induction motor. The distance between the LT pole and the pump set shed (5 m 3 m 3 m) is 10 metres. Assume any missed data. 10
12. Explain the construction and working of sodium-vapour lamp with a neat sketch. 10
13. (a) Write the merits and demerits of CTS and conduit wiring system in five aspects.
(b) Draw the electrical wiring diagram of godown wiring. 5+5
14. Draw a neat sketch of 100 kVA, 11 kV/400 V, 3- pole-mounted substation.
Estimate the materials required for erection of above substation. 10

- 15.** Draw a neat sketch of suitable earthing with necessary dimensions for a 10-HP motor and estimate the quantity of material required. 10
- 16.** Describe the procedure for the following tests with relevant sketches : 10
- (a) Insulation resistance
 - (b) Continuity test
 - (c) Polarity test
- 17.** State the important steps in maintenance of power transformer. 10
- 18.** (a) Explain the departmental procedure for obtaining service connection.
- (b) What is Rural Electrification Scheme? State the main functions of Rural Electrification Corporation. 5+5
