



C09-EE-404

3476

BOARD DIPLOMA EXAMINATION, (C-09)

OCT/NOV—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. List out electrical materials used in service mains
2. Write the important materials used in 3 domestic wiring installation.
3. Draw the wiring diagram for go-down wiring system.
4. Calculate the primary current and secondary current of a 200 kVA, 11 kV/400 V distribution transformer.
5. State the necessity of earthing and name the types of earthing systems.
6. Determine the length and size of 11 kV over head transmission line conductor required for 2.5 km by considering sag and jumpers.

7. What are the IE rules applicable to power wiring installation?
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 the importance of plant maintenance?
10. What is meant by staggering of brushes?

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. Write different types of wiring systems suitable for interior wiring and explain internal conduit wiring system.
12. Explain the construction and working of sodium vapour lamp with a neat sketch.
13. An irrigation pump set of 10 HP, 3-phase, 400 V, 50 Hz induction motor positioned at a depth of 38 m in a tube well from the ground level. The distance between the nearest LT pole and switch control room is 10 m and distance between switch control room and tube well is 3 m. Estimate the quantity of materials required and their cost.
14. Estimate the quantity of material required for laying of LT distribution line for 2 km. The line feeds both 3-phase and single phase including street lighting. Assume span of 60 m and two cut points with 61 2 59 sq. mm ACSR conductor on 8 m PSCC poles.

- 15.** Estimate the ^{*} quantity of the material required for a pole mounted 100 kVA 11kV/400 V substation.
- 16.** What are the tests to be conducted before energizing new electrical wiring installations? Explain any one of them.
- 17.** (a) List the materials required for pipe earthing with a diagram and label the parts.
(b) What is rural electrification scheme? State the main functions of rural electrification corporation.
- 18.** (a) Write the major hazards that frequently occur in any industry.
(b) What are the precautions to be taken while using a power transformer?
