

**6443**  
**BOARD DIPLOMA EXAMINATION**  
**JUNE- 2019**

\* **DIPLOMA IN ELECTRICAL AND ELECTRONICS ENGINEERING**  
**ELECTRICAL INSTALLATION & ESTIMATION**  
**FOURTH SEMESTER EXAMINATION**

**Time: 3 Hours**

**Total Marks: 80**

**PART - A (3m x 10 = 30m)**

*Note 1: Answer all questions and each question carries 3 marks*

*2: Answers should be brief and straight to the point and shall not exceed 5 simple sentences*

1. Classify the cables according to voltage grading
2. State any three merits of concealed wiring system
3. State any three advantages of cartridge fuses
4. Calculate the current-carrying capacity of a cable for a 3-phase, 10 HP, 440 V motor having 85% efficiency and 0.8 p.f. lagging
5. State the use of single phase preventer in the installation of irrigation pump set
6. Define service main and list Different types of service mains
7. Write the type of insulators used in overhead line
8. List the materials that are to be used in the earth pit surrounding the earth electrode.
9. State any three I.E rules for the safety of industry
10. State any three functions of Rural Electrification Corporation

**PART - B (10m x 5 = 50m)**

*Note 1: Answer any five questions and each carries 10 marks*

*2: The answers should be comprehensive and the criteria for valuation is the content but not the length of the answer*

- \* 11. (a) Classify different types of cables  
 (b) Write the full forms of the following electrical devices.  
 (i) SPST (ii) DPST (iii) TPST (iv) TPICN (v) MCB

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12. An irrigation pump set of 7.5 KW is to be installed at a distance of 20m from a 3-phase, 415 V distribution line
- List the materials required for the service main.
  - Design the specification of the materials required for the service main.
  - Draw the wiring diagram from distribution pole to the motor pump set.
  - Design the specification of the materials required to make wiring installation to the pump set. Assume any missing data.
13. Draw the wiring layout for a big hotel with lift arrangement
14. (a) Write any five general IE rules while preparing internal wiring estimation.  
(b) List major steps involved in estimation of Domestic Load.
15. Estimate the materials required for erection of 3-phase, 5-wire distribution line of the length of 2 Km and the span between the two poles is 60m over a 8m long PSCC poles. Assuming the distribution lines are arranged in vertical fashion. Assume missing data if any
16. Draw a neat sketch of 250 kVA, 11kV/415V, 3-Phase plinth mounted sub-station and prepare the materials for the erection of the above substation
17. Draw a neat sketch of pipe earthing showing dimensions and estimate the quantity of materials required
18. Calculate the regulation of a distribution line with 7/2.11mm ACSR conductor which is emanating from Distribution transformer, the load particulars with distance are shown in Fig.

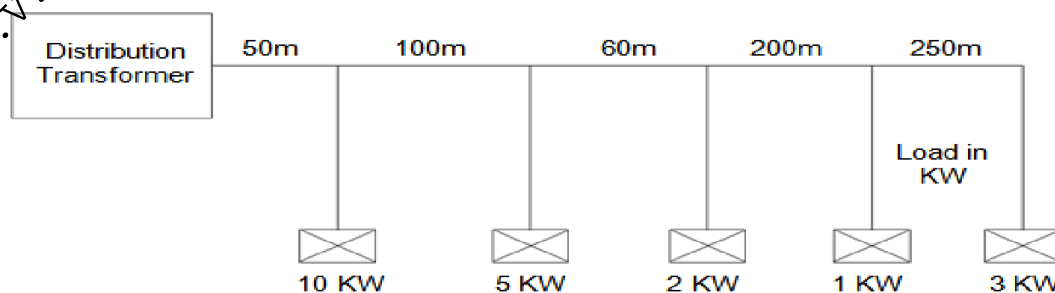


Fig. Load particulars of 11 KV line

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