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**BOARD DIPLOMA EXAMINATION, (C-14)  
OCTOBER/NOVEMBER-2018  
DEEE-FOURTH SEMESTER EXAMINATION**

**ELECTRICAL INSTALLATION AND ESTIMATION**

Time : 3 Hours ]

[ Total Marks: 80

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**PART-A**

3X10=30

- Instructions :**
1. Answer **All** questions.
  2. Each question carries **THREE** marks
  3. Answer should be brief and straight to the point

1. Classify different types of cables according to voltage grading and type of insulation.
2. State the advantages of conduit wiring.
3. State the reasons for not using fuse in a neutral wire.
4. Draw the single line diagram of an electrical installation of a motor.
- \* 5. State the factors on which the choice of wiring system depends.
6. Calculate the size of the cable for the given 3-phase, 5H.P, 415 V induction motor. If efficiency is 85% and p.f is 0.8(lag).
7. Calculate the no of various insulators needed for the erection of 490m, 3-phase, 11kv over head line without any-turnings, by taking a span of 70m.
8. What is the purpose of Earthing?
9. Specify the value of Earth resistance to be maintained for different electrical installation.
10. What are the important tests to be conducted before energizing a domestic wiring installation?

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Contd..,

## PART-B

10X5=50

**Instructions** :

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

11. (a) Explain the reasons for fire accidents in electrical system.  
(b) Explain the effect of electric shock on human.
12. Estimate the number of sub-circuits and size of main switch, distribution board and the size of cable required for a residential building which is provided with various electrical installations as shown in Fig. 1. Assume any missing data.

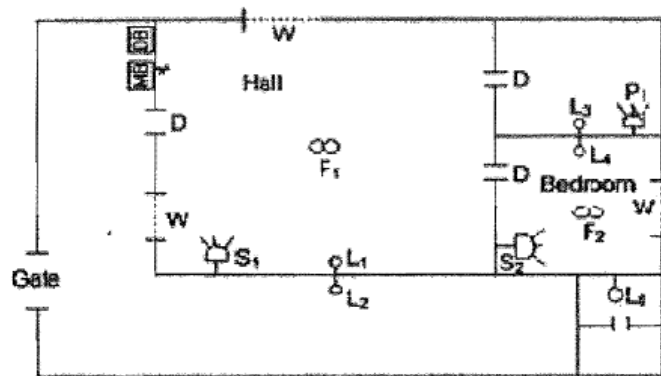


Fig. 1

13. Prepare the quantity of materials for an agricultural pump set of 6kW, 3-phase, 400V motor. The distance between L.T pole and the pump set shed ( 5x3x3) m is 10 meters. Assume missing data if any.
14. Draw the wiring layout of a four-storey Hotel with Lift arrangement.
15. A new 2.5 km, 11kv line is to be erected and connected to the existing 11kv line. The height of the pole is 10m. ACSR conductor of size 6/1x2.11 mm is to be used. Estimate the materials required. At least two cut points and three 90° angle points may be assumed. Assume a span 80m.
16. Explain the constructional details of plinth mounted transformer with neat sketch.
17. Draw a neat sketch of plate Earthing and estimate the quantity of materials required.
18. Describe the following test in detail.
  - (a) Continuity of wiring in an electrical installation.
  - (b) Insulation resistance between conductors.

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