

DIPLOMA EXAMINATION IN ENGINEERING/TECHNOLOGY/
MANAGEMENT/COMMERCIAL PRACTICE — OCTOBER, 2018

ELECTRICAL ESTIMATING AND COSTING

[Time : 3 hours

(Maximum marks : 100)

PART — A

(Maximum marks : 10)

Marks

I Answer *all* questions in one or two sentences. Each question carries 2 marks.

1. State utilization factor.
2. Mention any two merits of cleat wiring.
3. Define earthing.
4. What are the classification of substations based on location ?
5. What are the high voltage levels used for long transmission ?

(5×2 = 10)

PART — B

(Maximum marks : 30)

II Answer any *five* of the following questions. Each question carries 6 marks.

1. Draw a neat sketch of sodium vapor lamp and mark the main parts.
2. Mention the factors which affects illumination on work plane.
3. Write any six general rules for internal wiring.
4. Briefly explain CTS wiring also mention its merits and demerits.
5. List out different type of starters used in for motors.
6. List out six major components used in pole mounted substation.
7. Draw a neat sketch of stay (Guys) used for poles and mark the main parts.

(5×6 = 30)

PART — C

(Maximum marks : 60)

(Answer *one* full question from each unit. Each full question carries 15 marks.)

UNIT — I

III (a) Find the utilization factor of a room having dimensions 10 m × 6 m. It is to be illuminated by 9 lamps with a uniform illumination of 100 lux. Take 1500 lumens as the output of each lamp.

8

(b) State and prove Lambert's cosine law.

7

OR

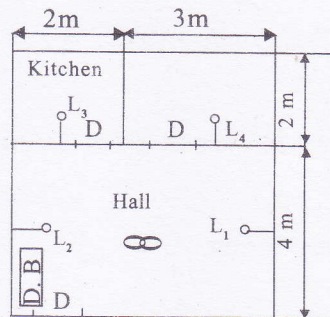
- | | Marks |
|---|-------|
| IV (a) Briefly explain different types of lighting schemes. | 8 |
| (b) List out the wiring accessories used for a domestic installation. | 7 |

UNIT — II

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| V (a) Explain the various types of internal wiring systems. | 8 |
| (b) Briefly explain circuits and sub circuits. Determine the number of sub circuits for the following loads : lamps 60W 8 Nos., Fan 60W 5 Nos., 5A socket 60W 8 Nos., Refrigerator 500W 1 No., electric heater 1000W 1 No. | 7 |

OR

VI



Estimate the quantity of material and its cost for surface conduit system of wiring in a house as per the given plan. Provide one socket in kitchen and hall. Wall thickness is 30cm and ceiling height is 3.5 m. Assume missing data if any.

15

UNIT — III

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| VII Estimate the list of material and cost required for a pipe earthing with a neat sketch. | 15 |
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OR

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| VIII Estimate the list of material and cost required for a three phase service connection using underground cable with a neat sketch. The supply is to be given from a LT supply 30m away from the building. | 15 |
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UNIT — IV

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| IX Estimate the material and cost for extending a single phase distribution line of 230V, over a distance of 500m using a 9m poles. Take span as 100m, using 7/2.59 AAC conductor. Draw the single line diagram of the extension. | 15 |
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OR

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| X Draw a neat sketch and prepare the quantity estimate and electrical accessories required for a 63kVA, 11kV/400 V, pole mounted distribution transformer. | 15 |
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