TED (15/19) 4033

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N22-03382

Reg.No.............................

Signature..........................

DIPLOMA EXAMINATION IN ENGINEERING/TECHNOLOGY/MANAGEMENT/ COMMERCIAL PRACTICE, NOVEMBER - 2022

ELECTRICAL ESTIMATING AND COSTING

[Maximum marks: 100] (Time: 3 Hours)

PART – A

Maximum marks : 10

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

1. State illumination.
2. Mention two types of conduit system wiring.
3. Write any two factors affecting earth resistance.
4. What are the classification of insulators used for overhead transmission.
5. Mention the voltage levels used for distribution purpose. (5 x 2 = 10)

PART – B

Maximum marks : 30

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

1. Write and prove inverse square law with a neat figure.
2. The candle power of lamp placed normal to a working surface is 60 CP. Find the distance lamp and source, if the illumination is 20 lux.
3. Write about IE rule 88 regarding guarding of transmission lines.
4. Draw and show the important parts of a standard pipe earthing scheme.
5. Estimate the materials required for a control panel installation.
6. List major components used in overhead transmission lines.
7. Write about indoor and outdoor substation. (5 x 6= 30)

PART – C

Maximum marks : 60

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

UNIT –I

III. (a) Two lamps of 500 candela and 800 candela are mounted 10m above the ground and are spaced 20m apart. Find the illumination on the ground (i) just below the lamp post. (ii) in between the lamp posts. (8)

(b) Explain about sodium vapour lamp with a neat sketch. (7)

OR

IV.(a) A room of 12m x 8m x 3m is to be illuminated with an average illumination of 160 lux. The utilization factor is 0.5 and depreciation factor 0.8. Find the number of 80 watts lamps requires. The lamp efficiency is 40 lumen/watt. Show the disposition of the lamps in the room. (8)

(b) Explain different types of lighting schemes. (7)

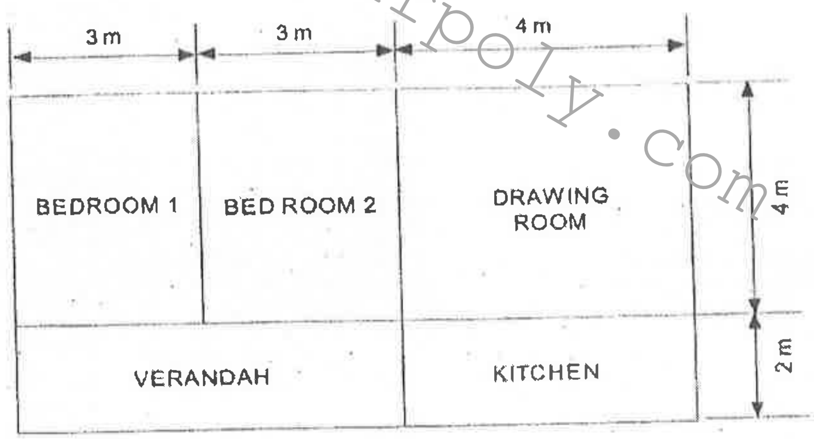
UNIT-II

V. (a) List the general wiring rules. (8)

(b) Determine total load, total current, the number of sub circuits for the following loads: lamps 60W 20nos, Fan 60W 15 nos, 5A socket 60W 14nos, Refrigerator 500W 1no. electric heater 1000W 3no. (7)

OR

VI. (a) Estimate the quantity of material and its cost for concealed conduit system of wiring in a house as per the given plan. Wall thickness is 40cm and ceiling height is 3.5m.



Location	Light (60W)	Fan (80W)	Plug point (80W)	Power Plug (1000W)
Varandha	1	1	1	1
Kitchen	1	1	------------	1
Bed room (each)	2	1	1	-----------
Drawing Room	2	1	1	----------

Assume missing data if any. (15)

UNIT-III

VII. Estimate the list of material required for a plate earthing with a neat sketch. (15)

OR

VIII. Estimate the list of material required for a three phase service connection using underground cable with a neat sketch. The supply is to be given from a LT supply 20m away from the building. (15)

UNIT-IV

IX. Estimate the material and cost for extending a single phase distribution line of 230V. over a distance of 1.6km using a 9m poles. Take span as 100m, using 7/2.59AAC conductor. Draw the single line diagram of the extension. (15)

OR

X. Draw a neat sketch and prepare the quantity estimate and electrical accessories required for a 100kVA, 11kV/400V, pole mounted distribution transformer. (15)

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