

DIPLOMA EXAMINATION IN ENGINEERING/TECHNOLOGY/
MANAGEMENT/COMMERCIAL PRACTICE — APRIL, 2019

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 Space height ratio.
2. Define illumination.
3. Write any two points to be considered before deciding any type of wiring.
4. Mention the factors influencing earth resistance.
5. List types of guard used for transmission lines.

(5 × 2 = 10)

PART — B

(Maximum marks : 30)

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

1. Draw mercury vapor lamp and mark the main parts.
2. Mention any six lamp holders.
3. Briefly explain Lead sheathed wiring, its merits and demerits.
4. Briefly explain IE rule 88 Guarding.
5. Briefly explain different types of earthing.
6. List out the points to be earthed for electrical installations.
7. List out major components used for overhead transmission lines.

(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) In a street lighting scheme lamps having luminous intensity of 600 candela are hung at a height of 6m. The distance between two lamp posts is 8m. Find the illumination under the lamp and at center in between the posts. 8
- (b) State and prove inverse square law. 7

OR

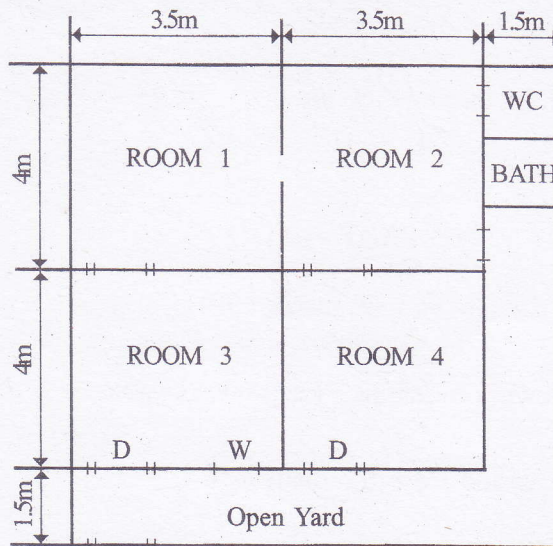
- IV (a) A small factory of $12\text{m} \times 8\text{m} \times 4\text{m}$ is to be illuminated with an average illumination of 80 lux on the working plane. Utilization factor is 0.5 and depreciation factor is 0.8. Find the number of lamps required. Lamp efficiency is 40 lumen/watt. 8
- (b) Draw a neat sketch of incandescent lamp and mark important parts. 7

UNIT — II

- V (a) Explain classification of conduit wiring system and mention merits and demerits. 8
- (b) Mention any seven IE rules related to power transmission. 7

OR

- VI Estimate the material and cost of a residential building using surface conduit system as per the plan.



Location	Light (60W)	Fan (80W)	5A Socket (80W)	15A Socket (1000W)
Room-1	1	1	1	1
Room-2	1	1	1	1
Room-3	2	1	1	-
Room-4	2	1	1	-
Open Yard	1	-	-	-
WC & bath	1	-	-	-

	Marks
UNIT — III	
VII Estimate the list of material and cost required for a plate earthing with a neat sketch.	15
OR	
VIII Draw a neat sketch and estimate list of materials and cost for providing service connection to a single storey building at 240V, 50Hz, single phase having a total load of 3kW. The supply is to be given from an overhead line 10m away from the building.	15
UNIT — IV	
IX Estimate the materials required for the 11kV transmission line of the length 8km and assuming 4 cut points and 4 angle points in the total length of installation. Assume span as 90m.	15
OR	
X Draw a neat sketch, estimate material required for a 300kVA, 11/0.4 kV plinth mounted substation.	15
