Marks

TED (15) – 4033

(REVISION – 2015)

Reg. No.....

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DIPLOMA EXAMINATION IN ENGINEERING/TECHNOLOGY/ MANAGEMENT/COMMERCIAL PRACTICE — APRIL, 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. Write the voltage and current specification of a switch used to control a ceiling fan.
2. Define the term used for lighting schemes - depreciation factor.
3. List out any four wiring material used in domestic surface conduit wiring system.
4. State the purpose of earthing in a house wiring installation.
5. Name any two type of poles used in low voltage overhead lines. (5×2 = 10)

PART — B

(Maximum marks : 30)

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

1. Describe the laws of illumination.
2. Explain various lighting schemes/lamp fittings commonly used.
3. Discuss any six rules regarding domestic conduit wiring system.
4. Sketch pipe earthing scheme used in domestic wiring installations.
5. Enumerate the materials required for a single phase service connection.
6. Sketch pole mounted substation with all of its accessories.
7. List out materials required for a single phase L.V. over head line extending 300m. Span is 50m. (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 light scheme lamps having luminous intensity of 500 candela are hung at a height of 6m. The distance between two lamp posts is 10m. Find the illumination under the lamp and at centre in between two lamp posts. 8

(b) With neat sketch explain working principle of fluorescent tube light. 7

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Marks

IV (a) Two lamps are mounted at a height of 10m and 12m respectively. Their luminous intensity 100 and 200 candela. Horizontal distance between lamp posts is 20m. Calculate the illumination in the middle of posts. 8

(b) With neat sketch explain working principle of neon lamp. 7

UNIT — II

V (a) Estimate the number of sub circuits in a wiring installation for the following loads. Lamp100W - 4, Fan 80W - 4, Plug points 100W - 2, Power plug 1500W - 2, Motor 1.5 HP - 1. 8

(b) Explain different types of house wiring systems. 7

OR

VI (a) Estimate the full load current and current in each sub circuit in a 1 phase wiring installation for the following loads. Lamp100W - 5nos., Fan 80W - 5nos., Plug points 100W - 3nos., Power plug 1000W - 2nos., Motor 1HP - 1no. 8

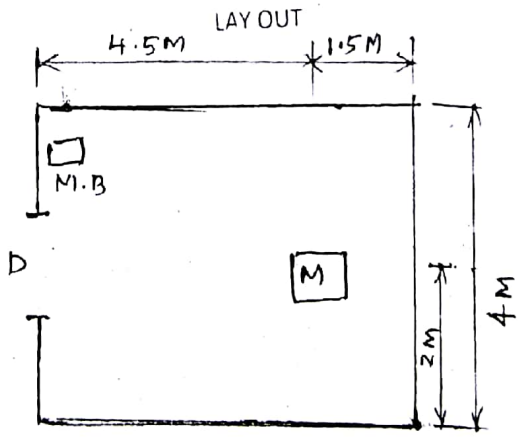
(b) Discuss the features of lead sheathed wiring installation. 7

UNIT — III

VII Estimate the material required for the erection of irrigation pump set of 7.5 HP, 3 phase, 400volt. Assuming the distance from pole to pump set shed is 15m and pump set shed to pump set is 20m which is available near to the well. Draw a single line diagram of installation. 15

OR

VIII As per the lay out induction motor is to be installed in a flour mill a 10HP of 3 phase, 400V. Draw a single line diagram of power wiring. Estimate the materials for the scheme.



15

UNIT — IV

IX (a) Enumerate any ten major components of substation. 10

(b) Discuss about insulators used in over head electric lines. 5

OR

X (a) Prepare a list of ten major components of over head line 10

(b) Calculate the number of span, number of poles, number of insulators of a 11KV line with 7/2.59ACSR conductors over PSCC poles of 8m height at 80 m span. Distance between transformers is 1KM. 5