TED (15) 4033

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

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DIPLOMA EXAMINATION IN ENGINEERING/TECHNOLOGY/
MANAGEMENT/COMMERCIAL PRACTICE, NOVEMBER-2020

ELECTRICAL ESTIMATING AND COSTING

[Maximum marks: 75] (Time: 2.15 Hours)

PART – A

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

1. State Inverse square law.
2. Define M.H.C.P.
3. Write the purpose of rule 80.
4. List out any four types of earthing.
5. Mention minimum spacing between conductors and structure for 11KV (3 x 2 = 6)

PART – B

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

1. Explain the working of a fluorescent lamp with a neat figure
2. Draw and identify each parts of a sodium vapour lamp.
3. Describe cleat wiring with the help of a neat sketch.
4. Explain any six general rules related to wiring.
5. Illustrate industrial bus-bar system with a neat sketch.
6. List out any six factors affecting the earth resistance.
7. Explain any four major components of over head line. (4 x 6= 24)

PART – C

(Answer ***any of the three units*** from the following. Each full question carries 15 marks)

UNIT –I

III.(a) In a lighting scheme, lamps having luminous intensity of 800 candela are hung at a height of 7m. The distance between two lamp posts is 10m. Find the illumination at centre in between the lamp posts and under the lamp. (8)

(b) Illustrate the working of a mercury vapour lamp with a neat diagram (7)

OR

IV. (a) Explain the following terms

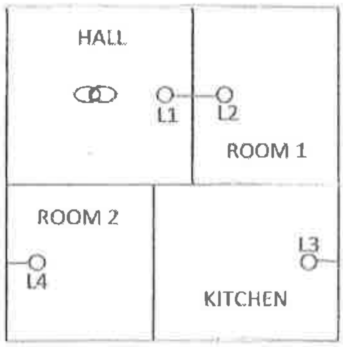
1. Utilization factor 2. Maintenance factor

3. Space height ratio 4. Luminous efficiency (8)

(b) A room 8m x 10m is illuminated by eight 80 watt lamps. The luminous efficiency of the lamp is 25 lumens per watt and the co-efficient of utilization is 0.45. Find the illumination (7)

UNIT-II

V. Prepare an estimate and its cost for a surface conduit system of wiring as per the given layout. Provide one socket outlet in kitchen, room and hall. Ceiling height is 4m and wall thickness is 40cm. Assume missing data if any. (Hall & Kitchen: 4m x 4m, Room 1&2 : 4mx3m) (15)



OR

VI. (a) Determine the number of sub-circuits for the following loads as per I.E.E rules. Fans 80W 6Nos., 5A socket 100W 4Nos., Refrigerator 300W 1No., Lamps 60W 7Nos., Single phase ½ HP pump motor 1No., Induction cooker 2500W 1No., (8)

(b) Explain conduit system of wiring (7)

UNIT-III

VII. Estimate the quantity of materials required for a control panel in a small workshop having three machines.(10HP 1 No, 5HP 2 Nos.) V_L 440V, pf 0.85, η 0.9 (15)

OR

VIII. Estimate the list of materials and its cost for a plate earthing with a neat sketch (15)

UNIT-IV

IX. Prepare the quantity of materials and accessories required for 1 km length of a 11KV line with 7/2.59 ACSR conductors over PSCC poles of 9 meter height at 60 meter span. (15)

OR

X. Estimate the cost of material for laying three phase low voltage distribution line for 300 meter in a residential area using U.G.cable. The distribution line feeds both three phase loads and single phase loads including street lights. Assume a suitable span. (15)

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