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Eighth Semester B.E. Degree Examination, June/July 2015
Electrical Design, Estimating & Costing

Time: 3 hrs.

Max. Marks:100

**Note: Answer FIVE full questions, selecting
at least TWO questions from each part.**

PART – A

- 1 a. What is estimating and what are the importance of the estimating and costing? (04 Marks)
 - b. Explain the followings: i) Electrical schedules ii) Catalogues iii) Purchase system. (08 Marks)
 - iv) Market survey. (08 Marks)
 - c. List out guidelines for inviting tenders. (08 Marks)
- 2 a. List the general rules guide lines for residential installation. (06 Marks)
 - b. Estimating the quantity of materials required for wiring a newly constructed building where plan is as shown in Fig. Q2 (b). Assume the details of the load. All dimensions are in meters. (14 Marks)

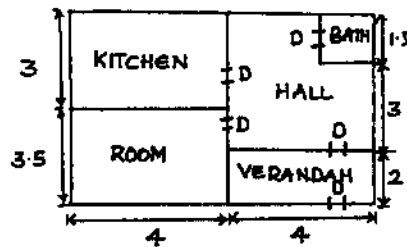


Fig. Q2 (b)

- 3 a. Explain the determination of load calculation selection of size of service connection and nature of supply. (06 Marks)
- b. Fig. Q3 (b) shows the plan of ground floor of school building. School building consists at ground floor, 1st floor and 2nd floor having same plan that of ground floor. Draw single line diagram for ground floor and calculate material required for three floors. (14 Marks)

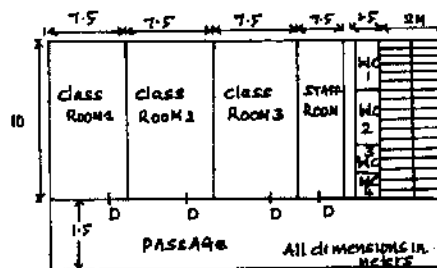


Fig. Q3 (b)

- 4 a. Write a short note on service lines. (06 Marks)
- b. Write the reasons for excess recording of energy consumption by energy meter. (06 Marks)
- c. Find the material required for 1- ϕ overhead service lines of a house located 10 meters away from pole, with following loads:
Lighting = 300 watts, Heating = 2500 watts.
Assume Safety factor = 2. (08 Marks)

PART – B

- 5 a. Explain determination of input power, input current to motors and rating of cables. (06 Marks)
 b. A 10 H.P. (metric), 415 V, 3 ϕ , 50 Hz squirrel cage induction motor is to be installed in a flour mill, the plan of which is shown in Fig. Q5 (b). Show the wiring diagram of the layout and estimate the quantity of materials required and its cost. (14 Marks)

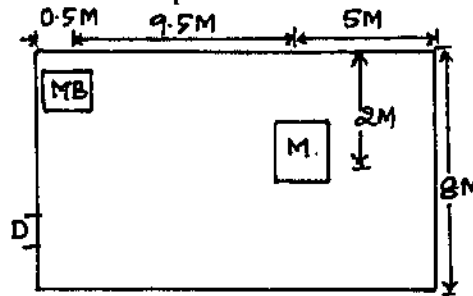


Fig. Q5 (b)

- 6 a. What are the main requirements of the line supports? Describe factors governing height of pole? (08 Marks)
 b. Estimate quantity of materials required for adding 132 KV bay at 132 KV grid substations. (12 Marks)
- 7 a. List the points to be considered at the time of erection of overhead lines. (08 Marks)
 b. A pole for an overhead 11 KV-3 phase, 50 Hz line is required to be earthed (pipe) and a stay is to be provided. Make a neat sketch showing how it should be done. Prepare a list of materials required. (12 Marks)
- 8 a. Write short notes on indoor substation? List advantages and disadvantages of outdoor substation over indoor substation. (08 Marks)
 b. Estimate the quantity of material required for installation of 132/33 KV substation with main and transfer bus scheme having 2 \times 40 MVA transformers. (12 Marks)
