

# CBCS SCHEME

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BANGALORE - 560 037

15EE553

## Fifth Semester B.E. Degree Examination, June/July 2018 Electrical Estimation and Costing

Time: 3 hrs.

Max. Marks: 80

- Note: 1. Answer any FIVE full questions, choosing ONE full question from each module.**  
**2. Use of wire tables is permitted.**

### Module-1

- 1 a. Write the necessity of estimating and costing. (06 Marks)  
b. Explain : i) Comparative statement ii) overhead charges iii) contingencies. (06 Marks)  
c. Write any four rules of Indian electricity. (04 Marks)

OR

- 2 a. What are the essential elements of estimating and costing. (04 Marks)  
b. Explain : i) Electrical schedule ii) Catalogues iii) Market survey and source selection. (06 Marks)  
c. Mention the different modes of tendering and explain them. (06 Marks)

### Module-2

- 3 a. What are the differences between a wire and a cable? (03 Marks)  
b. Mention the different types of cables used in internal wiring. (06 Marks)  
c. Mention the general rules for internal wiring system. (07 Marks)

OR

- 4 a. What are the necessity of standing cables. (03 Marks)  
b. What are the factors to be considered for the selection of cables for wiring installations? (04 Marks)  
c. Estimate the quantity of materials required for wiring a newly constructed building where the plan is as shown below. [Refer Fig. Q4(c)]

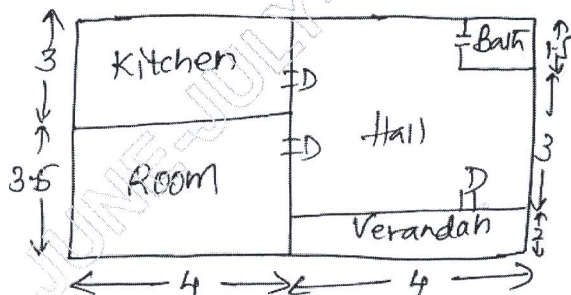


Fig.Q4(c)

Assume the details of load. All dimensions are in meters.

(09 Marks)

### Module-3

- 5 a. What are service lines? Mention the different types. (06 Marks)  
b. Find the material required for single phase overhead service lines of a home located 10 meter away from the pole, the loads are; lighting = 300 watts, heating = 2500 watts. Assume safety factor = 2. (10 Marks)

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OR

- 6 a. What are the important consideration for wiring motor installation. (05 Marks)
- b. Estimate the quantity of materials required to install, 2-AC 3ph, 415, 50Hz, squirrel cage induction motor to be installed in a workshop. Refer Fig.Q6(b). Draw wiring diagram and single line diagram. (11 Marks)

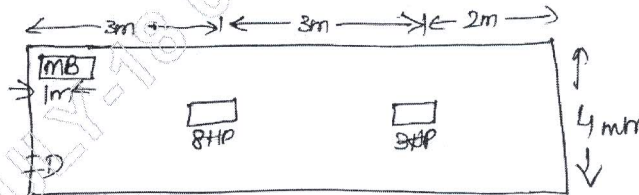


Fig.Q6(b)

Module-4

- 7 a. What are the factors on which conductor spacing's and ground clearance depends on? (04 Marks)
- b. What are the points to be considered at the time of erection of overhead lines? (06 Marks)
- c. What are the function of : i) Cross Arms ii) Guys and Stays. (06 Marks)

OR

- 8 a. Mention the conductors configurations. What are anti climbing devices, and erection of supports? (06 Marks)
- b. A pole for an over head 11KV, 3-phase, 50Hz line is required to be earthed and stay is to be provided, make a neat sketch how it should be done. Prepare list of materials required. (10 Marks)

Module-5

- 9 a. What is the purpose of providing the substation earthing system? (06 Marks)
- b. List the advantages and disadvantages of outdoor substation over indoor substation. (06 Marks)
- c. Write the types substation. (04 Marks)

OR

- 10 a. Mention the equipments in a substation. Draw a typical substation single line diagram. (04 Marks)
- b. Estimate the quantity of material required for the erection of 250 KVA pole mounted substation (12 Marks)

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