CBCS SCHEME

USN | | | | | | | | | | |

15EE553

Fifth Semester B.E. Degree Examination, July/August 2021
Electrical Estimation and Costing

Time: 3 hrs. Max. Marks:80

Note: *1. Answer any FIVE full questions.*
2. Use of conductor table is permitted.
3. Missing data, if any, may be suitably assumed.

1 a. What is Estimation? Write the necessity of estimation and costing. **(08 Marks)**

b. Explain the following terms :
i) Catalogues
ii) Overhead charges
iii) Purchase orders
iv) Profit. **(08 Marks)**

2 a. What are the guidelines for Inviting Tenders? **(08 Marks)**

b. Explain activities of purchase department. **(08 Marks)**

3 a. Mention any 12 general rules to be followed for internal wiring. **(06 Marks)**

b. Determine the size of cable required to carry the maximum current of 50Amperes. It is given that length of cable is 500meters and allowable voltage drop is 5% of declared voltage. The declared supply voltage is : i) 400V DC ii) 400V AC. **(04 Marks)**

c. What is fuse? What are the advantages and disadvantages of fuses? What are the different types of fuses? **(06 Marks)**

4 a. Estimate the quantity of materials required for a single bed room house where plan is shown in Fig.Q4(a) below. Assume PVC casing capping system with one plug point at room and hall, all dimensions are in meters.

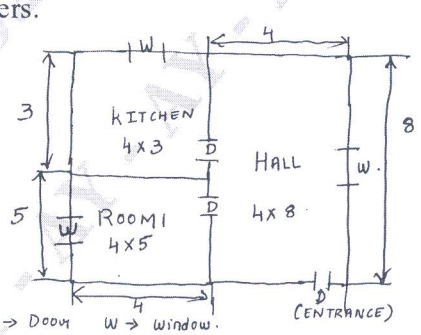

Fig.Q4(a) **(12 Marks)**

b. Write a note on conduit wiring with its advantages and disadvantages. **(04 Marks)**

5 a. What do you understand by 'Service Line'? What are the methods of installing service lines, explain any one methods. **(06 Marks)**

b. Prepare a list of material and estimate the cost for providing service connection to a single storey building at 240V single phase 50Hz having a light and fan load of 5kW. The supply is to be taken from an overhead line 20meters away from building. **(10 Marks)**

6 a. Write any 8 important considerations regarding motor installation wiring. **(04 Marks)**

b. A 15HP, 415V, 3ph, 50Hz induction motor is to be installed in a workshop, the plan is shown below in Fig.Q6(b). Show the layout of the wiring and estimate the quantity of material required and give its approximate cost. The wiring is to be surface conduit type.

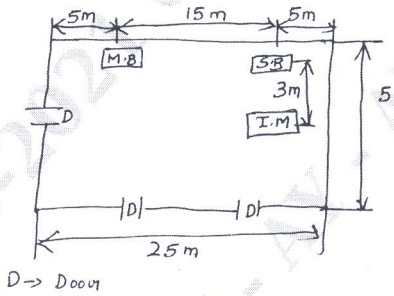

Fig.Q6(b) **(12 Marks)**

7 a. List out the various components of overhead lines and explain briefly each component. **(06 Marks)**

b. A pole for an overhead 11kV, 3phase, 50Hz line is required to be earthed and a stay is to be provided. Make a sketch how it should be done. Prepare a list of materials required and estimate the cost. **(10 Marks)**

8 a. List out the points to be considered at the time of erection of overhead lines. **(06 Marks)**

b. Estimate the quantity of material required for construction of 132kV single circuit transmission line. (Transmission to be constructed on DC towers). **(10 Marks)**

9 a. Write a notes on :

i) Substation auxiliaries supply

ii) Power transformers. **(08 Marks)**

b. Estimate the quantity of material and cost for erection of a 250KVA pole mounted substation. **(08 Marks)**

10 a. What is the purpose of providing substation earthing system? **(04 Marks)**

b. Write short notes on :

i) Protective relay

ii) Reactors

iii) Circuit brakers. **(12 Marks)**

* * * * *