

**R16**

Code No: 136EW

**JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD**

**B. Tech III Year II Semester Examinations, November/December - 2020**

**DESIGN ESTIMATION AND COSTING OF ELECTRICAL SYSTEMS**

(Common to CE, ME, ECE, MIE)

Time: 2 hours

Max. Marks: 75

**Answer any five questions**  
**All questions carry equal marks**

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1. What are the different types of electrical service connections? List advantages and disadvantages. [15]
2. Prepare material required for overhead service connection to the home of 2 kW load at 240V, 50Hz supply. The supply is to be taken from 20 meter away from the home. Assume diversity factor as 1.66 and future load as 100%. [15]
3. Explain how the electrical material cost is estimated for residential installation. [15]
4. List out the points to be checked while carrying out the inspection of wiring installation. [15]
5. What are the factors to be considered in the process of the mechanical design of overhead lines? [15]
6. Estimate the quantity of material required for running 80 km, a single circuit of 66 kV transmission line using four-legged fabricated steel structures. The conductor used No.2 ACSR. Assume a span of 500 meters and every 10th tower is an anchor tower. [15]
7. Estimate the quantity of materials required for adding 132KV bay at 132KV grid substation. [15]
8. Define the following:  
a) Luminous flux  
b) Brightness  
c) glare  
d) Luminous intensity  
e) candela. [3+3+3+3+3]

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