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Code No: 136EW

R16

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD

B. Tech III Year II Semester Examinations, May - 2019

DESIGN ESTIMATION AND COSTING OF ELECTRICAL SYSTEMS

(Common to CE, ME, ECE, MIE)

Time: 3 hours

Max. Marks: 75

Note: This question paper contains two parts A and B.

Part A is compulsory which carries 25 marks. Answer all questions in Part A. Part B consists of 5 Units. Answer any one full question from each unit. Each question carries 10 marks and may have a, b, c as sub questions.

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PART - A

(25 Marks)

- 1.a) What is Earthing? [2]
- b) How electric system is protected from short circuit? [3]
- c) What are the types of loads present in residential buildings? [2]
- d) What are the types of loads present in commercial buildings? [3]
- e) What are the voltage levels of overhead transmission lines? [2]
- f) What are the voltage levels of underground distribution lines? [3]
- g) What is a substation? [2]
- h) What is the main purpose of substation? [3]
- i) Define illumination. [2]
- j) How illumination is measured? Explain. [3]

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PART - B

(50 Marks)

- 2.a) With the help of neat sketch, Explain about three phase four wire distributed system.
- b) Discuss in detail about the guidelines for the installation of fittings. [5+5]

OR

- 3.a) Discuss about various protections of electrical systems.
- b) Explain in detail about the location of switches and outlets. [5+5]

- 4.a) What are the factors to be considered for electrical installation of residential building? Explain.
- b) Discuss in detail about the estimation of material for the electrical installation of commercial building. [5+5]

OR

- 5.a) How electrical installation is done for commercial buildings? Explain.
- b) Discuss in detail about the electrical installation of small industries. [5+5]

- 6.a) Explain in detail about the type of support required for overhead distribution lines.
- b) Discuss in detail about the mechanical design of overhead lines. [5+5]

OR

- 7.a) Discuss in detail about the material required for the laying of overhead transmission lines.
- b) Compare overhead and underground distribution lines in selection. [5+5]

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- 8.a) Discuss in detail about various types of substations.
- b) With the help of neat sketch, discuss about floor mounted type substations. [5+5]

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- 9.a) What is an outdoor substation? What are its features?
- b) What are the advantages and disadvantages of pole mounted type substations? Explain. [5+5]

- 10.a) Explain in detail about the laws of illumination.
- b) What is OCFL? Discuss in detail. [5+5]

AG AG AG AG **OR** AG AG AG A

- 11.a) What are the various types of light sources? Explain.
- b) Explain the functional differences between LED and CFL. [5+5]

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