

R16

Code No: 136EW

7.a

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.

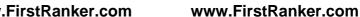
PART - A

(25 Marks) What is Earthing? [2] 1.a) How electric system is protected from short circuit? b) [3] c) What are the types of loads present in residential buildings? [2] What are the types of loads present in commercial buildings? d) [3] What are the voltage levels of overhead transmission lines? [2] e) f) What are the voltage levels of underground distribution lines? [3] What is a substation? g) [2] What is the main purpose of substation? h) [3] i) Define illumination. [2] How illumination is measured? Explain. **i**) [3] PART - B **(50 Marks)** With the help of neat sketch, Explain about three phase four wire distributed system. 2.a) Discuss in detail about the guidelines for the installation of fittings. b) [5+5]Discuss about various protections of electrical systems. 3.a) Explain in detail about the location of switches and outlets. b) [5+5]4.a) What are the factors to be considered for electrical installation of residential building? Discuss in detail about the estimation of material for the electrical installation of b) commercial building. [5+5]OR How electrical installation is done for commercial buildings? Explain. 5.a) b) Discuss in detail about the electrical installation of small industries. [5+5]Explain in detail about the type of support required for overhead distribution lines. 6.a) Discuss in detail about the mechanical design of overhead lines. [5+5]b)

Compare overhead and underground distribution lines in selection.

OR

Discuss in detail about the material required for the laying of overhead transmission



[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]
	OR	
9.a)	What is an outdoor substation? What are its features?	
b)	What are the advantages and disadvantages of pole mounted type substations? E	xplain.
		[5+5]
10.a)	Explain in detail about the laws of illumination.	
b)	What is OCFL? Discuss in detail.	[5+5]
	OR	
11.a)	What are the various types of light sources? Explain.	

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b) Explain the functional differences between LED and CFL.

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