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Code No: 136EW 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) Max. Marks: 75

Time: 3 hours

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

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]		
b)	What is the main purpose of substation?	[3]		
i)	Define illumination.	[2]		
j)	How illumination is measured? Explain.	[3]		
	Xe			
PART - B				
	Ro	(50 Marks)		
2.a)	With the help of neat sketch, Explain about three phase four wire distribute	ed system.		
b)	Discuss in detail about the guidelines for the installation of fittings.	[5+5]		
3.a)	Discuss about various protections of electrical systems.			
b)	Explain in detail about the location of switches and outlets.	[5+5]		
0)				
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 in commercial building.	nstallation of [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			
<u>b)</u>	Compare overhead and underground distribution lines in selection.	[5+5]		

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(25 Marks)

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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.	
b)	Explain the functional differences between LED and CFL.	[5+5]

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