Reg. No. : | | | | | | | | | | | | |

Question Paper Code: U4304

B.E. / B.Tech. DEGREE EXAMINATION, NOV 2024

Fourth Semester

Electrical and Electronics Engineering

21UEE404 ELECTRIC POWER TRANSMISSION & DISTRIBUTION

(Regulations 2021)

Duration: Three hours | Maximum: 100 Marks

Answer ALL Questions

PART A - (10 x 2 = 20 Marks)

1.	Why High voltage is preferred for Power Transmission?	CO1- U
2.	State the disadvantages of HVDC transmission	CO1 -U
3.	Differentiate between bundled conductors and stranded conductors.	CO2 -U
4.	Define skin effect. On what factors it depends	CO2 -U
5.	Illustrate Ferranti effect.	CO2 -U
6	Define voltage regulation of transmission line	CO2 -U
7	State the methods for improving string efficiency	CO1- U
8	Define Grading of Cables.	CO1 -U
9	Define Sag	CO1- U
10	List out the different techniques employed for grounding in substations?	CO1- U

PART – B (5 x 16= 80 Marks)

11.	(a)	Explain in detail about the structure of electrical power system.	CO1 - U	(16)
		Or		
	(b)	Explain in detail about FACTS device and its types	CO1- U	(16)
12.	(a)	Derive an expression for Inductance of single phase Overhead line transmission line	CO3 - App	(16)
		Or		

	(b)	Derive the Capacitance of a Three phase line with Unsymmetrical Spacing	CO3-App	(16)
13.	(a)	Using rigorous method, derive expression for sending end voltage and current for a long transmission line	CO3- Ana	(16)
		Or		
	(b)	Derive the expression power flow through transmission line and explain various steps involved in sending end power circle diagram with neat sketch	CO3-Ana	(16)
14.	(a)	(i) Explain the constructional features of one LT and HT cable.	CO1 U	(8)
		(ii) Compare overhead lines and underground cables.	CO1 U	(8)
		Or		
	(b)	What are the various types of insulators? Draw and explain about suspension type and pin type insulators.	CO1-U	(16)
15.	(a)	Derive the expressions for sag and conductor length under bad weather conditions. Assume Shape of over head line is a parabola.	CO2-A	(16)
		Or		
	(b)	Make use of safety considerations associated with the layout of a GIS substation, explain it in details.	CO2- A	(16)