Code: P18EEE06

R18

HALL TICKET NUMBER

PACE INSTITUTE OF TECHNOLOGY & SCIENCES::ONGOLE
(AUTONOMOUS)
IV B.TECH I SEMESTER END SUPPLEMENTARY EXAMINATIONS, MARCH-2023
ELECTRICAL DISTRIBUTION SYSTEM
(EEE Branch)

Time: 3 hours Max. Marks: 60

Note: Question Paper consists of Two parts (Part-A and Part-B)

PART-A

Answer **all** the questions in Part-A (**5X2=10M**)

Q.No.		Questions	Marks	CO	KL
1.	a)	Classify different type of loads	[2M]	1	
	b)	List out various voltage levels which are used in distribution system	[2M]	2	
	c)	Give the equations for voltage drop and power loss of non-uniformly distributed load	[2M]	3	
	d)	Enumerate the objectives of distribution system protection	[2M]	4	
	e)	List out compensating devices used for power factor improvement	[2M]	5	

PART-B

Answer One Question from each UNIT (5X10=50M)

Q.No.		Questions	Marks	CO	KL
		UNIT-I			
2.	a)	What are the different types of load in distribution system? Explain them in	[7M]	1	
	b)	A feeder supplies 2MW to an area. The total losses at peak load are 100kW and units supplied to that area during a year are 5.61 million. Calculate the loss factor.	[3M]	1	
		OR			
3.	a)	Derive a relationship between load factor and loss factor?	[5M]	1	
	b)	What is meant by the term load? How loads can be classified and explain?	[5M]	1	
		UNIT-II			
4.	a)	What are the various factors that are to be considered in selecting sub-station location?	[5M]	2	
	b)	Explain design consideration of loop type and network type distribution feeder and also compare them?	[5M]	2	
		OR			
5.	a)	Design the basic practice of the secondary distribution system?	[5M]	2	
	b)	A 3-phase radial express feeder has a line-to-line voltage of 30 kV at the receiving end, a total impedance of (5+ j 11) /phase and a load of 6 Mw with a lagging P.f. of 0.92. Determine the line-to-line voltages at the sending end and the Percentage voltage regulation of the feeder?	[5M]	2	
		UNIT-III			
6.	a)	Define the power loss and why it is more in distribution system compare to transmission System?	[5M]	3	
	b)	Show that power loss due to load currents in the conductors of equivalent three phase lateral is approximately 1/1.64 times the two phase 3 wire lateral with multi grounded Neutral	[5M]	3	

		OR			
7.	a)	Derive the expression for voltage drop and power loss for non-three phase System?	[5M]	3	
	b)	A 3-phase radial express feeder has a line-to-line voltage of 30 kV at the receiving end, a total impedance of (5+ j 11) /phase and a load of 6 Mw with a lagging p.f. of 0.92. Determine the line-to-line voltages at the sending end and the percent voltage regulation of the feeder?	[5M]	3	
		UNIT-IV			
8.	a)	What is the data required for the general coordination procedure? Explain Fuse-Circuit breaker coordination	[5M]	4	
	b)	Obtain the sequence impedance computed for a L-L and L-G faults. Compare the magnitude of fault current in both cases?	[5M]	4	
		OR			
9.	a)	Describe the operating principle of Line sectionalizer	[5M]	4	
	b)	Difference between the fuse to fuse coordination and fuse to recloser coordination	[5M]	4	
		UNIT-V			
10.	a)	Compare and explain the role of shunt and series capacitors in P.F. correction	[5M]	5	
	b)	Explain methods of power factor improvement in distribution systems?	[5M]	5	
		OR			
11.	a)	Discuss the procedure employed to determine the best capacitor location	[5M]	5	
	b)	Discuss how a series capacitor boosts the voltage with the help of a phasor diagram? What are the drawbacks of this method?	[5M]	5	

******