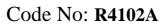


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Set No. 1

## IV B.Tech I Semester Supplementary Examinations, February/March - 2018 ELECTRICAL DISTRIBUTION SYSTEMS

(Electrical and Electronics Engineering)

Time: 5 hours Max. Marks: 75			
Answer any FIVE Questions			
All Questions carry equal marks *****			
1	a) b)	What is meant by the term load? How loads can be classified? How is load modeling done in distribution networks? A distribution substation experiences an annual peak load of 4,500 kW. The	[8]
	0)	total annual energy supplied to the primary feeder circuits is 207 kWh. Find(i)the annual average power(ii)the annual load factor	[7]
2	a)	Enumerate the various factors that influence the voltage levels in the design and operation of the distribution system.	[10]
	b)	List out any five factors that are to be considered in selecting a primary feeder rating.	[5]
3	a)	Explain a methodology for optimal location of substations and indicate the benefits derived through this approach.	[8]
	b)	How do you fix the rating of a distribution substation? Explain.	[7]
4	a)	Prove that the power loss due to load currents in the conductors of the single phase two-wire unigrounded lateral with full capacity neutral is 6 times larger	
	b)	than the one in the equivalent three phase 4-wire lateral. Explain the difference between a 3-phase balanced and non 3-phase primary	[8]
	0)	line.	[7]
5	a)	What are the types of common faults that occur in a distribution system?	[5]
	b)	Discuss the principle of operation of line sectionalizer and also explain the difference between a fuse and circuit breaker.	[10]
6	a)	What is residual current circuit breaker and its types? Explain the working of RCCB with neat sketch.	[10]
	b)	What data to be required to coordinate protective devices? Explain coordination techniques.	[5]
7	a)	What are the different types of capacitors? Explain the effect of shunt capacitor.	[6]
	b)	How do you found the best location of capacitors for optimizing power loss and voltage regulation?	[9]
8	a)	Where voltage control equipment is used? What are the various equipment for	[0]
	b)	voltage control? And also explain the effect of series capacitors. How an AVR can control voltage? With the aid of suitable diagram explain its function.	[9]
			[6]

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