Code No: **R4102A** **R10** **Set No. 1**

IV B.Tech I Semester Supplementary Examinations, February - 2019

ELECTRICAL DISTRIBUTION SYSTEMS

(Electrical and Electronics Engineering)

Time: 3 hours **Max. Marks: 75**

Answer any FIVE Questions
All Questions carry equal marks
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1	a)	Explain briefly the following classification of Loads (i) Residential loads (ii) Industrial loads.	[8]
	b)	Define the loss factor. Deduce the relation between the load factor and loss factor.	[7]
2	a)	Distinguish the merits and demerits of radial and loop type of feeders.	[8]
	b)	Draw the one line diagram of radial type primary feeder and explain.	[7]
3	a)	What are the various factors that are to be considered in selecting substation location?	[8]
	b)	List and explain the benefits through optimal location of primary feeders.	[7]
4	a)	Derive the expression for voltage drop and power loss for non-uniformly radial type distribution load.	[8]
	b)	A 3-Φ feeder line is fed from a 11 kV supply and has line impedance of (20+j30) Ω/km/conductor. A delta connected, 3-Φ, induction motor is connected at the end of the feeder and takes 400 kW at 0.8 p.f lag. If the feeder length is 3 km. Determine the line voltage drop and voltage at the load end.	[7]
5	a)	Explain the difference between a fuse and circuit breaker, mentioning advantages of each of them.	[8]
	b)	Enumerate the primary objectives of distribution system protection.	[7]
6	a)	Explain the coordination procedure between recloser and fuse.	[8]
	b)	Describe the working of residual current circuit breaker with neat sketch.	[7]
7	a)	Explain the role of shunt and series capacitors in power factor correction.	[7]
	b)	A 3 Φ, 500 h.p, 50 Hz, 11 kV star connected induction motor has a full load efficiency of 85% at lagging p.f of 0.75 and is connected to a feeder. If it is desired to correct the p.f of 0.9 lagging load, determine the (i) The size of the capacitor bank in kVAR (ii) The capacitance of each unit if the capacitors are connected in delta as well as star.	[8]
8	a)	Why voltage control is necessary in distribution system? What are the disadvantages of low voltage in the system?	[7]
	b)	Discuss the effect of AVB/AVR in distribution system in detail.	[8]