

**FACULTY OF ENGINEERING****B.E. 4/4 (EEE) II-Semester (Main) Examination, April / May 2013****Subject : Electrical Power Distribution Engineering****Time : 3 Hours****Max. Marks: 75****Note: Answer all questions of Part - A and answer any five questions from Part-B.****PART – A (25 Marks)**

1. Define the following: (i) Diversity factor (ii) Average Load (2)
2. Brief about the Radial and ring main distribution system. (2)
3. What are the advantages of secondary banking? (2)
4. Arrange the voltage level starts from distribution substation to consumer point. (2)
5. What the distribution system is maintained in radial fashion? Give reasons. (3)
6. Explain briefly about the SCADA. (2)
7. Classify the primary distribution system. (3)
8. Explain in brief about distribution automation. (3)
9. Explain the effect of shunt capacitor to distribution system. (3)
10. Explain about breaker and a half scheme. (3)

**PART – B (5x10=50 Marks)**

11. Derive the relation between Loss factor and Load factor including all cases. (10)
- 12.(a) What is load curve? List out the different types of load curves. (2)  
(b) A distribution substation experiences an annual peak load of 3,500 kW. The total annual energy supplied to the primary feeder circuits is  $10^7$  kWh. Find the annual average power and annual load factor. (8)
- 13.(a) A single phase circuit has the following data :  $Z_{total}=(1+j3)$ ,  $\Omega$  Receiving end voltage (VR)=2.4kV and receiving end current (IR)=50 A at  $\phi = -30^\circ$ . Determine the following (i) p.f. of the load (ii) Load p.f. for which the voltage drop is maximum. (5)  
(b) With a neat sketch draw the different types of radial type primary feeders. (5)
- 14.(a) Explain about distribution automation. (5)  
(b) Give a brief application about AMR. (5)
15. Derive the expression for voltage drop and power loss calculations of a radial feeder with uniformly distributed load. (10)
- 16.(a) Explain how the economic justification for capacitors can be determined. (5)  
(b) Derive an expression for findings the % v D of a distribution substation with 'n' primary feeders. (5)
17. Write short notes on the following: (10)  
(a) Different types of rate structures  
(b) TAC equation

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