(b) How can we deter the best capacitor location. (6)

(c) How can you j the economics involved in ir ation of extra capacitors ? (5)

(d) What is power fac orrection ? Why it it needed and how done ? (3)

8. Write short notes on :

(a) Effect of series citor on voltage control. (5)

(b) Effect of AVB/AVR oltage control. (5)

(c) Relationship betw ad factor and loss factor. (5)

(d) Line drop compen (5)

Roll No. .....

23261

M. Tech. 1st Sem. (Electrical Power Systems) Examination– December, 2016

ELECTRICAL DISTRIBUTION SYSTEMS (ELECTIVE-I)

Paper : MTEPS-105

Time : 3 hours ***Max. Marks : 100***

Before answering the questions, candidates should ensure that they have been supplied the correct and complete question paper. No complaint in this regard will be entertained after the examination.

Note: Attempt any **five** questions out of given eight.

1. (a) What is the difference between a circuit breaker and a dis-connecting switch ? (5)

(b) Explain (i) Air Break Switches (ii) Surge Arresters (iii) Grounding Switches. (9)

(c) Name some of the main components of a substation and explain them in brief. (6)

2. (a) Explain the c ication of loads with the help of rea examples. (10)

(b) A ground resi e of a substation is 0.35 Ω. Calcul ıe rise in potential of the steel struc f the station is hit by a 50 KA lightni roke. (10)

3. (a) Compare the mission of D.C. and A.C. (5)

(b) Compare the k diagrams of an electric instal ı at a residence, industry or a c ercial establishment. (8)

(c) It is proposed ıse a No. 30 AWG copper wire as mporary fuse. If the initial temp. 0°C, calculate the following : (7)

(i) The I^2t r l to melt the wire (copper mel 1083°C).

(ii) The time n to melt the wire if the short ci s 30 A.

4. (a) Explain the r of a Distribution System. (7)

(b) What are the ntages of selecting optimal locati or a distribution system ? (6)

(c) What are the considerations needed for the design of a distribution feeder ? (7)

5. (a) Explain the manual methods used for solution of radial networks. (7)

(b) Compare three phase and non three phase primary lines used in a system. (7)

(c) What are the types of common faults ? How are these calculated ? (6)

6. (a) A factory draws an apparent power of 300 KVA at a power factor of 65% (lagging). Calculate the KVAR capacity of the capacitor bank that must be installed at the service entrance to bring overall power factor to : (10)

(i) Unity

(ii) 85% lagging

(b) Explain the concept of power fluctuation on a DC line. How can it be studied ? (5)

(c) Explain the concept of capacitive compensation for power control. (5)

7. (a) Compare the effect of fixed and switched shunt capacitor, for compensation. (6)