TE (Electrical) Sem VI CBGS
Power System Analysis

Duration 3hrs Total Marks -80 Date : 16-11-18

N.B.:- (1) Question No.1 is compulsory.
(2) **Attempt** any **three** questions out of remaining **five** questions.
(3) Draw neat diagrams wherever it is necessary.

Q 1. Answer the following questions.
A) Write a short note on phase shift in star-delta transformers. 05
B) Discuss the phenomenon of corona. 05
C) Explain the following typical cases of line specifications; 05
1) Open circuited line.
2) Short circuited line.
D) What is tower footing resistance? 05

Q 2 a) Explain in brief Selection of circuit breakers and short circuit MVA. 10
Q 2 b) Discuss Z_{BUS} building algorithm. 10

Q 3 a) Derive the necessary equation to determine the fault current for a line-to-line fault. Draw the diagram showing the inter-connection of sequence networks. 10
Q 3 b) Explain the zero sequence impedance networks of transformer. 10

Q 4 a) Discuss the phenomenon of wave reflection and refraction. Derive expressions for reflection and refraction coefficients. 10
Q 4 b) How can Bewely Lattice be drawn? Discuss its use. 10

Q 5 a) Define disruptive critical voltage and visual critical voltage. On what factors do they depend? Derive the equations for calculating these voltages. 10
Q 5 b) Discuss the use of ; 10
a) Ground wires.
b) Surge arrestors.

Q 6 a) Explain surge impedance loading. Also Explain the effect of line length, load power and power factor on voltage and reactive power. 10
Q6 b) Discuss the maximum power transfer and stability considerations in transmission line. 10

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