

DR. BABASAHEB AMBEDKAR TECHNOLOGICAL UNIVERSITY, LONERE –
RAIGAD -402 103
Semester Examination – May - 2019

Branch:-Electrical Engineering

Sem.:- I

Subject with Subject Code:- POWER SYSTEM-I (BTEEC402)

Marks: 60

Date:- 14/05/2019

Time:- 3 Hr.

Instructions to the Students

1. Each question carries 12 marks.
2. Attempt **any five** questions of the following.
3. Illustrate your answers with neat sketches, diagram etc., wherever necessary.
4. If some part or parameter is noticed to be missing, you may appropriately assume it and should mention it clearly

(Marks :60)

Q.1.

- a) Explain the working of thermal power plant with neat diagram (4)
- b) Explain the typical layout for a storage type hydro power plant (4)
- c) Explain the different types of sources for energy generation (4)

Q.2.a) Explain the electrical equipment's used in typical 11KV indoor Sub-station (6)

- b) The arrangement of conductors of a single phase transmission line is shown in figure 1, wherein the forward circuit is composed of three solid wires of 2.5mm and return circuit of 2 wires of 5mm, placed Symmetrically with respect to forward circuit find Inductance of the line?

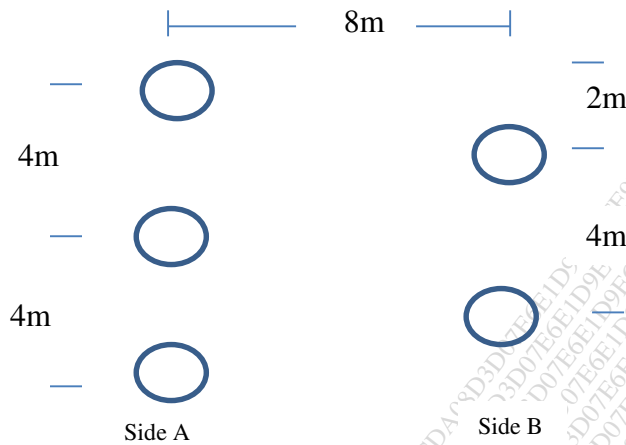


Figure 1

Q3) a) Find the capacitance of three phase line with equilateral spacing (6)

b) Explain the effect of earth on transmission line parameter (6)

Q4) a) Explain the types of Insulators for overhead lines? (4)

b) Explain string efficiency? Enlist the methods to improve string efficiency ? (4)

c) Explain the terms Skin effect and Proximity effect (4)

Q5) a) Find the generalized constants for Nominal-T method for medium transmission line along with Phasor diagram ? (4)

b) A 3 –phase ,50 Hz over head line is 100Kms long and has following constants :-

Resistance/km/phase

Inductance reactance/phase

Capacitive susceptance : 0.04×10^{-4} Siemen

Determine the sending and receiving end current ? (8)

(Use Nominal T method)

Q6)

a) Explain the calculation of sag of transmission line for unequal levels? The tower height are 30m and 90m respectively supports a transmission line at water crossing. The horizontal distance is 500m. If the tension is 1600 Kg? Find the clearance of conductor and water. (7)

b) What are the factors affecting corona effect? Enlist the advantages of corona? (5)

END