



Regulation R17

TKR COLLEGE OF ENGINEERING AND TECHNOLOGY  
(Autonomous, Accredited by NAAC with 'A' Grade)

Subject code: 1P5BB

B.Tech III Year I Semester Supplementary Examinations, December 2021

## POWER SYSTEMS-II

(Electrical and Electronics Engineering)

Maximum Marks: 70

Date: 29.12.2021 Duration: 3 hours

### Part-A

All the following questions carry equal marks

(10x2M=20 Marks)

- 1 What is the need for transposition of transmission lines?
- 2 Give brief about GMR and GMD and their significance.
- 3 Define surge impedance.
- 4 Classify about transmission lines.
- 5 Difference between lumped and distributed parameters?
- 6 Draw the nominal T model of a transmission line.
- 7 Give applications of sag template
- 8 Write short notes on stringing chart
- 9 What are the types of insulating materials used in cables?
- 10 Specify different parts of a Cable?

### Part-B

Answer all the following questions.

(5X10M=50Marks)

- 11 In a 3 phase transmission line the conductors are placed at the corners of an equilateral triangle of each side 2.5cm. If the radius of each conductor is 0.8cm find the inductance per phase per kilometer. (10M)

OR

- 12 Derive the capacitance of a 3 phase unsymmetrical overhead transmission line with transposed. (10M)
- 13 Derive the A, B, C and D constants for Nominal- $\pi$  model. (10M)

OR

- 14 How the corona forms in power systems and write the advantages and disadvantages. (10M)
- 15 Derive the expressions for regulation and efficiency of a short transmission line. Draw required circuit and phasor diagram. (10M)

OR

- 16 With neat sketch explain about suspension type and strain type insulators. (10M)

- 17 Explain Ferranti Effect in power systems. (10M)

OR

- 18 Derive the sag expression for a transmission line with the effect of ice covering and wind pressure. (10M)

- 19 Explain about construction of underground cable. (10M)

OR

- 20 Explain about inter-sheath grading of cables. (10M)