R18 Regulation *Subject code:2P6BA*

TKR COLLEGE OF ENGINEERING AND TECHNOLOGY

(Autonomous, Accredited by NAAC with 'A+' Grade)

B.Tech VI Semester Supplementary Examinations, May 2025

POWER SYSTEMS-II

(EEE)

Maximum Marks: 70 Date: 16.06.2025 Duration: 3 hours

Note: **1.This question paper contains two parts A and B.**
2. Part A is compulsory which carries 20 marks. Answer all questions in Part A.
3. Part B consists of 5 Units. Answer any one full question from each unit.
4. Each question carries 10 marks and may have a, b, c, d as sub questions.

Part-A

All the following questions carry equal marks (10X2M=20 Marks)		Marks	CO	BTL
1	What are bundled conductors?	2M	1	L1
2	ACSR conductor having 7 steel stands surrounded by25 aluminum conductor will be specified as?	2M	1	L1
3	What is the GMD&GMR?	2M	2	L1
4	What is GMR write the relationship with radius ?	2M	2	L1
5	What surge impedance ?	2M	3	L1
6	Define visual critical voltage?	2M	3	L1
7	Give applications of sag template	2M	4	L1
8	Classification of over head line insulators?	2M	4	L1
9	Write the types of the line supporters used inelectrical systems?	2M	5	L1
10	What is stringing chart?	2M	5	L1

Part-B

Answer All the following questions. (5X10M=50Marks)		Marks	CO	BTL
11	Derive the expression for inductance of a three phase double circuit line.	10M	1	L2
	OR			
12	Derive the expression for the capacitance of a conductor in adouble circuit hexagonal spaced three phase system?	10M	1	L2
13	Derive the A, B, C and D constants for normal T-type medium transmission line.	10M	2	L2
	OR			
14	Explain about the classifications of transmission lines.	10M	2	L2
15	Derive the A, B, C and D constants of long transmission line using Rigorous solution.	10M	3	L2
	OR			
16	Explain and derive expression for surge impedance andsurge impedance loading.	10M	3	L2
17	Derive the expression for sag and tension when the supports are at unequal heights	10M	4	L2
	OR			

18	Derive the sag expression for a transmission line withthe effect of ice covering and wind pressure.	10M	4	L2
19	Explain and derive the terms critical disruptivevoltage, visual critical voltage and corona loss?	10M	5	L2
	OR			
20	An insulator string consists of three units, each having a safe working voltage of 15 kV. The ratio of self-capacitance to shunt capacitance of each unit is 8: 1. Find the maximum safe working voltage of thestring. Also find the string efficiency.	10M	5	L2