

Enroll No

K.E.Society's
Rajarambapu Institute of Technology, Rajaramnagar
 (An Empowered Autonomous Institute, affiliated to SUK)
Unit Test -I (2025-26)

Q.P. Code
UT2917

T.Y. B.Tech.-Electrical Engineering

Course Code: EE3034

Course Name: Power System Analysis

Day & Date: Monday 11/08/2025

Time: 10:30 To 11:30

Max Marks- 25

- Instructions:**
- 1) All questions are compulsory.
 - 2) Figures in rounded () brackets within the question, indicate the scheme of marking for respective part of the question, whereas, figures in the first right column indicate total marks for that whole question.
 - 3) CO is the index number of the Course Outcome statement.
 - 4) The Bloom's taxonomy level (BL) for 1,2,3,4,5 and 6 is remember, understand, apply, analyze, evaluate and create respectively.
 - 5) Assume suitable data if necessary.
 - 6) Use of non-programmable calculators is allowed

			Mark s	BT Leve l	COs
Q. 1	A	Three generators are rated as follows: G1: 100 MVA, 33 kV, $x_{g1} = 0.10$ pu. G2: 150 MVA, 32 kV, $x_{g2} = 0.08$ pu G3: 110 MVA, 30 kV, $x_{g3} = 0.12$ pu. Determine the reactance of the generator corresponding to base values of 200 MVA and 35 kV	6	3	1
OR					
		A three-phase transmission line transmits 50 MW at 0.8 power factor lagging at 132kV If the impedance of the transmission line is $(40 + j100)\Omega$, calculate the pu values of (i) complex power, real power, and reactive or VAR power, (ii) voltage,(iii) current, and (iv) impedance, resistance, and reactance. For the transmission line, assume $MVA_{base} = 100$ and $kV_{base} = 132$.			
	B	List the advantages of Per Unit value	4	2	1
Q. 2	A	Calculate the symmetrical components of phase voltages, when phase voltages are given as $V_a = 100\angle 0^\circ$ V, $V_b = 150\angle 120^\circ$ V and $V_c = 210\angle 240^\circ$ V	6	3	2
	B	Draw Sequence Parameters and Sequence Networks of Generators	5	3	2
	C	Derive the equation of power in terms of symmetrical components	4	3	2

