

Enroll No

Q.P. Code
UT 3192

**Unit Test - II (2025-26)**

S.Y. B.Tech.-Electrical Engineering

**Course Code: EE213**

**Course Name: Power Transmission & Distribution System**

Day & Date: *Saturday 29/09/2025*

Time: *12:45 TO 12:55*

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

			Marks	BT Level	COs
Q.1	A	Derive an expression for inductance of single phase two conductor system.	8	4	2
	B	A single-phase line has two parallel conductors 2 meters apart. The diameter of each conductor is 1.2 cm. Calculate the loop inductance per km of the line.	4	3	2
		<b>OR</b>			
	B	A single-phase transmission line has two parallel conductors 3 meters apart, the radius of each conductor being 1 cm. Calculate the capacitance of the line per km. Given that $\epsilon_0 = 8.854 \times 10^{-12}$ F/m	4	3	2
Q.2	A	Illustrate various parts of a high voltage cable with a neat labeled diagram.	9	2	3
	B	A single-core cable has a conductor diameter of 1cm and insulation thickness of 0.4 cm. If the specific resistance of insulation is $5 \times 10^{14} \Omega\text{-cm}$ , calculate the insulation resistance for a 2 km length of the cable.	4	3	2
		<b>OR</b>			
	B	A single core cable has a conductor diameter of 1 cm and internal sheath diameter of 1.8 cm. If impregnated paper of relative permittivity 4 is used as the insulation, calculate the capacitance for 1 km length of the cable	4	3	2

