



SCHOOL OF ELECTRICAL ENGINEERING
WINTER SEMESTER 2025-2026
CONTINUOUS ASSESSMENT TEST - I

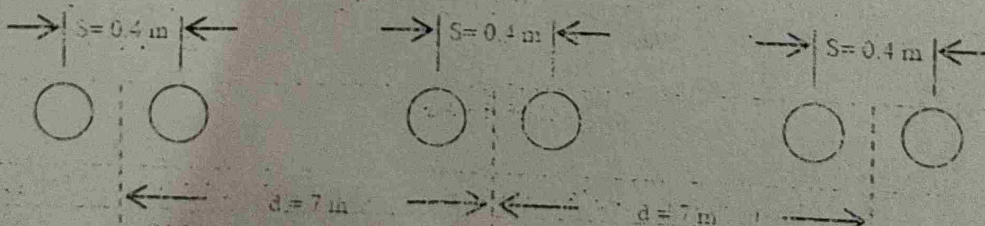
Programme Name & Branch : B.Tech. - EEE
 Course Code and Course Name : BEEE304L: Power Systems Engineering
 Faculty Names : Arun S L, Meikandasivam S
 Class Numbers : 0823, 2296
 Date of Examination : 29/01/2026
 Exam Duration : 90 minutes
 Maximum Marks: 50

General instructions:

- Answer All Questions
- Rough work should not be done on question paper. It will be treated as malpractice.
- M - Max mark; CO - Course Outcome; BL - Blooms Taxonomy Level (1 - Remember, 2 - Understand, 3 - Apply, 4 - Analyse, 5 - Evaluate, 6 - Create)

Course Outcomes Statements:

- CO. 1: Understand and comprehend the concept of various conventional power generation systems
- CO. 2: Compute and analyze the transmission line parameters.
- CO. 3: Design electrical equivalent models and analyze the performance of transmission & distribution systems.
- CO. 4: Design and analyze the number of string insulators and line sag for overhead lines.
- CO. 5: Compute various electricity tariff schemes and analyze power factor improvement methods.

Q. No	Question	M	CO	BL
1.	Draw the schematic diagram of coal-based steam power plant. Write short notes on economizer in thermal power plant	7 3	1	1
2.	With relevant diagram, derive the equations of the inductance/ phase/ conductor/ meter for a three-phase single circuit transmission system with unsymmetrical configuration.	10	2	2
3.	Find the inductive reactance in ohms/km at 50 Hz of a three-phase bundled conductor line with two conductors per phase as shown in below Fig. 1. All the conductors are ACSR with radii of 1.725 cm.  Fig. 1	10	2, 3	3

REG.NO.:

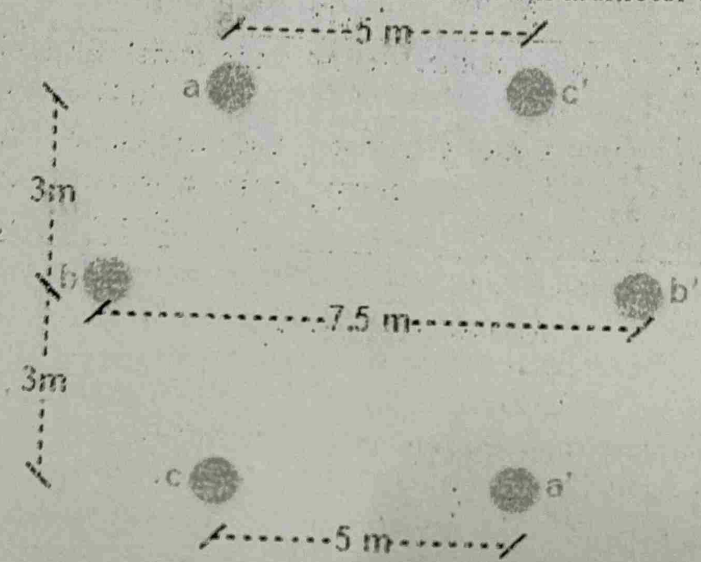


VIT

Vellore Institute of Technology
(Deemed to be University under section 3 of UGC Act, 1956)

SLOT: C1+TC1+TCC1

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4	Determine the <u>capacitance per kilometre</u> of the three-phase double circuit as shown in Fig. 2. All the conductors are ACSR with diameter of 3 cm.  Fig. 2	10	2	3
5	A string of four insulators has a self-capacitance equal to 5 times pin to earth capacitance. Find - the voltage distribution across various units as a percentage of total voltage across the string (ii) string efficiency.	10	4	3
