



Daffodil International University
Department of Electrical and Electronic Engineering
Faculty of Engineering
Mid Term Examination, Fall-2025

Course Code: 0713-227
Section: A, B & C
Full Marks: 25

Course Title: Transmission and Distribution of Electrical Power
Level-Term: L2-T2
Exam Date: October 18, 2025
Teacher's Initial: KA
Time: 1.5 Hours

[There are three (3) questions, answer all of them.]
[The figures in the right-hand margin indicate the allocated marks.]
[COs represent learning outcomes of the course.]

- Q1. a) **Explain** why A.C.S.R. conductors the ideal choice for distribution and transmission lines. CO1 02
C-2
- b) **Compare** DC and AC voltage transmission based on their advantages and disadvantages. CO1 03
C-2
- c) **Define** skin effect and corona? **Discuss** the methods for reducing corona effect in an overhead transmission line. CO1 03
C-2
- d) **Identify** the main advantages of suspension type insulator over pin type insulator. **List** the methods for improving string efficiency? CO1 04
C-2
- Q2. a) **Show** that in a string of suspension insulators, the disc nearest to the conductor has the highest voltage across it. CO2 03
C-2
- b) The three bus-bar conductors are being supported by three-disc insulators having a safe working voltage of 2A·C kV. The voltage across the across the top unit is 1B·C kV. CO2 03
C-4
- Calculate**
- i) The bus-bar voltage
- ii) String efficiency
- Here, ABC is last 3 digit of your Student ID.
- c) A three-phase transmission line 120 km long, is delivering 20 MW at 66 kV 0.85 power factor lagging has the following constants: CO2 04
C-4
- Resistance/km = 0.03 Ω
- Reactance/km = 0.065 Ω
- Susceptance/km = 0.06×10^{-6} siemens
- Estimate** (i) The voltage regulation (ii) The transmission efficiency, considering the total capacitance of the line is localized at the receiving end alone.
- Q3. a) A transmission line has a span of 250 m between level supports. The conductor has a cross-sectional area of 3.80 cm². The breaking stress of the conductor is 4218 kg/cm². The specific gravity of the conductor material is 2.7 gm/cm³ and wind pressure is 1.2 kg/m length. **Determine** the height of the conductor above the ground level at which it should be supported if a minimum clearance of 6.5 m is to be left between the ground and the conductor and safety factor is 3. CO3 03
C-3