



Power Transmission and Distribution Questions

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What is Power Transmission?

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The carriage of electric power from **Generation Station** to **Distribution Stations** is known as **Power transmission**. Electric power is generated at the power stations (Nuclear plants, Hydro power plants, Coal power plants etc.). It is then **transmitted** over large distances to **distribution stations** with the help of **conductors** known as **transmission lines**.

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ElectricalEngineering.XYZ PT&D Question No: 1

What is Corona in Transmission Lines

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When an alternating voltage is applied across two conductors having larger spacing as compared to their diameters, there is no change in surrounding air. However, when the applied voltage exceeds certain limit (technical termed as critical disruptive voltage) the conductors are surrounded by a faint violet glow called corona.

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ElectricalEngineering.XYZ PT&D Question No: 2

What is ACSR?

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ACSR or **Aluminum conductor steel** is a type of transmission line stranded conductor typically used in overhead power lines. The outer strands of **ACSR** are made of **Aluminum** while inner strand is made of **steel**.

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ElectricalEngineering.XYZ PT&D Question No: 3

What is Sag?

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$$\text{Sag} = S$$

The vertical distance between straight lines joining the point of consecutive supports and lower point of conductor is called the Sag.



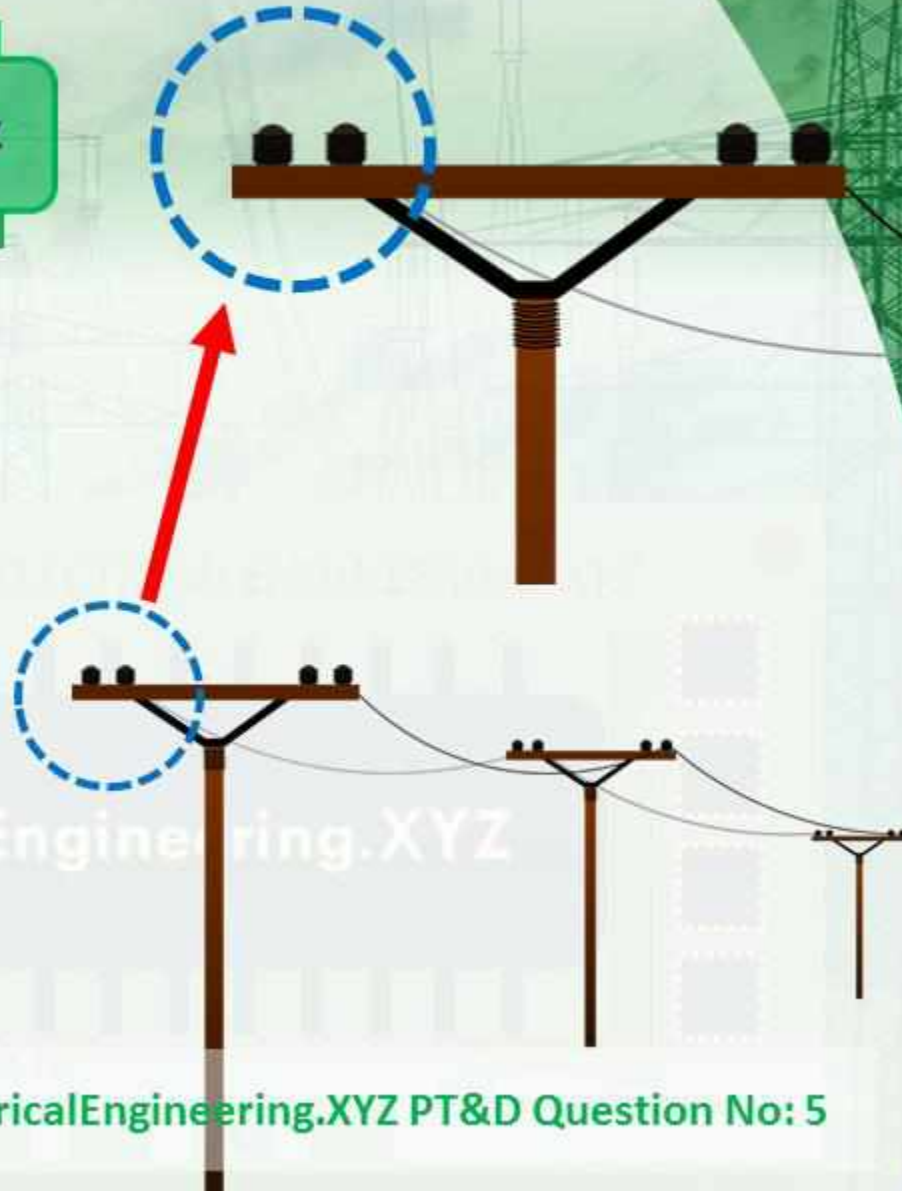
What is an Insulator?

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The insulator is a transmission line component which is attached to supports and which insulates the conductors from the ground.

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What are some factors on which sag depends?

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There are five major factors on which sag depends:

- 1. Weight of conductor**
- 2. Temperature**
- 3. Tension in conductor**
- 4. Length of span**
- 5. Tension in conductor**

Why do overhead transmission lines possess capacitance?

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The two conductors of transmission lines behave as two plates of capacitor, while the air between conductors behave as dielectric. In this manner the overhead transmission lines possess capacitance.

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Why bundled conductors are employed in transmission lines?

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For extra high voltage, the corona effect is dominant. By employing multiple conductors (bundled conductors) the corona effect is reduced. Thus, bundled conductors are employed in transmission lines to fight corona effect.



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ElectricalEngineering.XYZ PT&D Question No: 8

Why transmission line conductors are stranded?

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Transmission lines conductors are stranded so as to increase the flexibility. Solid conductors (especially in case of larger diameters) are difficult to handle and tend to splinter especially at support points.

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What is skin effect?

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Whenever alternating current flows through the conductor, it is not uniformly distributed, rather it concentrates near the surface of the conductor. This concentration of alternating current at surface is known as skin effect.

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