

- Q)When bundle conductor are used in place of single conductor the effective inductor and capacitance will respectively--> **decrease and increase.**
- Q)Why ACSR is used in case of transmission lines?--> **Lighter and have more mechanical strength.**
- Q)Flux linkages due to internal flux is independent of the -----> **conductor size**
- Q)The conductor of a 10 Km long single phase, two wire line are separated by a distance of 1.5 m the diameter of each conductor. The inductance of the circuit is--> **23.8 mH.**
- Q)Electric stress is expressed in terms of--> **kV / cm**
- Q)Bundled conductor are mainly used in high voltage overhead lines to--> **reduce corona.**
- Q)ACSR conductor means--> **aluminum conductor steel reinforced.**
- Q)The function of steel wire in a ACSR conductor is--> **improves mechanical strength.**
- Q)Inductance of an overhead line, in comparison to that of a cable of same capacity is--> **Larger**
- Q)The inductance of a single-phase two-wire line is given by (D is the distance between conductors and r is the radius of conductor)--> **$0.4 \log_e \frac{D}{r} \text{ mH/km}$**
- Q)Bundled conductors are mainly used--> **To decrease the series reactance.**
- Q)A 3-phase transmission line has its conductors at the corners of an equilateral triangle with side 3 m. The diameter of each conductor is 1.63 cm. The inductance of the line per phase per km is--> **1.232 mH**
- Q)The inductance of single phase two wire power transmission line per km gets doubled when the--> **Distance between the wire is increased as square of the original distance**
- Q)Skin effect--> **Increases the effective resistance but reduces the effective internal reactance**
- Q)In high voltage transmission lines the top most conductor is--> **earth conductor.**
- Q)Which of the following properties has got higher value for aluminum in comparison to that of copper?--> **Electrical resistivity**
- Q)The self GMD of a conductor with three strands each of radius r and touching each other is--> **$r(0.7788 \times 2)^{1/3}$**
- Q)For a stranded conductor, the ratio of GMR to actual radius is--> **less than 0.7788**
- Q)Capacitance in equivalent circuit of a transmission line is due to--> **different in potential of the line**
- Q)If the separation between the three phases of a transmission line is increased then--> **the inductance will increase and capacitance will decrease**
- Q)The inductance of a transmission line is minimum when--> **GMD is low and GMR is high**
- Q)The PU impedance value of an alternator corresponding to base values 13.2 KV and 30 MVA is 0.2 PU. The PU value for the base values 13.8 KV and 50 MVA will be--> **0.306 PU**
- Q)For a conductor of radius r and having a separation of D in between the conductors, the value of inductance--> **increases**
- Q)The inductance of a power transmission line increases with--> **Increase in spacing between the phase conductors**
- Q)If spacing between the conductors is decreased, the inductance of the line--> **Decreases**
- Q)If the conductor diameter decreases, inductance of the line--> **Increases**
- Q)If the capacitance between two conductors of a 3 phase line is 4 F, then capacitance of each conductor to neutral is--> **8 F**
- Q)The presence of earth wire in case of over-head lines--> **Increases line capacitance**
- Q)Transmission lines are transposed to--> **Prevent interference with neighboring telephone lines**
- Q)If the conductor has larger diameter the corona losses-----> **reduces**
- Q)The charging reactance of 50km length of the line is 1500Ω. What is the charging reactance for 100km

length of the line?--> **750 Ω**

Q)If the effect of earth is taken into account, then the capacitance of line to ground--> **Increases**

Q)The charging current in a transmission line--> **Leads the voltage by 90°**

Q)What is the self GMD of a conductor having 7 identical strands having radius r is--> **Equal to 2.1767**

Q)In a single phase or 2 wire dc line, the loop resistance is--> **Double the resistance of single conductor**

Q)When a fixed amount of power is to be transmitted, the efficiency of transmission increases when--> **Voltage increases, p.f increases**

Q)The separation between the three phases of a transmission system is increased. The effect on line inductance (L) and line capacitance (C) is--> **L will increase and C will decrease**

Q)The capacitance of a transmission line is a--> **Shunt element**

Q)The multiplying factor of 0.7788 to adjust the radius in order to account for internal flux linkages applies only to ----- conductors.--> **Solid round**

Q)The reactance of the bundled conductors is -----compared to solid conductors.--> **decreased**

Q)Inductance of a conductor is minimum when--> **GMR is High**

Q)A three phase transmission line has its conductors at the corners of an equilateral triangle with side 3m. the diameter of each conductor is 1.63cm. the inductance of the line per phase per km is--> **1.232mH**

Q)The alternating magnetic flux in a conductor caused by the current flowing in a neighboring conductor gives rise to circulating currents which cause an apparent increase in the resistance of the conductor. This phenomenon is called as--> **Proximity effect**

Q)If the conductor diameter decreases, inductance of the line--> **Decreases**

Q)The inductance of single phase two wire power transmission line per Km gets doubled when the--> **The distance between the wires is increased as square of original distance**

Q)When an alternating current flows in the conductor, the outer filaments of the conductor carries more current than the filaments closer to the centre and this is commonly known as.--> **Skin effect**

Q)A three phase, 50 Hz fully transposed line has conductors spaced equilaterally at 3m. find capacitance to neutral per km per phase--> **0.0105F**

Q)The inductance per unit length of an over head line due to internal flux linkages--> **Independent of the size of the conductor**

Q)Which statement is false for long transmission line?--> **All line constants are series element.**

Q)In nominal T method,--> **full charging current flows over half the line.**

Q)Which combination is true for short lines?--> **$A = 1$, $B = Z$, $C = 0$, $D = 1$.**

Q)----- is defined as the change in receiving end voltage, expressed in percent of full load voltage, from no-load to full load, keeping the sending end voltage and frequency constant--> **regulations line**

Q)The concept of an electrically short, medium and long line is primarily based on--> **physical length of the line.**

Q)The main consideration for higher and higher operating voltage of transmission is to--> **increase power transfer capability.**

Q)If the capacitance between two conductors of a 3 phase line is 4F, then capacitance of each conductor to neutral is--> **8 F**

Q)If the inductance between two conductors of a 3 phase line is 3mH, then inductance of each conductor to neutral is--> **1.5mH**

Q)66KV is suitable for transmission of power over--> **60km**

Q)The material used for the manufacture of ground wire is--> **Galvanized steel**

Q)ASCR is used in place of copper in overhead lines because of--> **Economy**

- Q) Guy wire is employed for--> **Supporting the pole**
- Q) The voltages at the two ends of a line are 66 KV and its reactance is 30Ω . The capacity of the line is--> **145.2 MW.**
- Q) Tap changing transformers can be used to improve -----> **voltage profile**
- Q) The capacitance effects of short transmission line is--> **negligible.**
- Q) Up to what length of transmission line the capacitance can be neglected?--> **80 Km.**
- Q) Hollow conductors are used in transmission line to--> **reduce corona**
- Q) Which of the following is neglected while analyzing a short transmission line?--> **Shunt admittance**
- Q) Which of the following voltage regulation is considered to be the best?--> **2%**
- Q) The regulation of a line at full load 0.8 pf lagging is 12%. The regulation at full load 0.8 pf leading can be--> **4%**
- Q) In a transmission line the distributed constants are--> **Resistance, inductance, capacitance and shunt conductance**
- Q) The effective resistance of a conductor will be the same as ohmic resistance when--> **Current is uniformly distributed in the cross section of the conductor**
- Q) The diameter of each strand is d then the diameter of n -layer stranded conductor will be--> **$(2n+1)d$**
- Q) Bundled conductors reduce--> **Surface electric stress of conductor**
- Q) The ABCD constants of a 3 phase transposed transmission line with linear and passive elements--> **A and D are equal**
- Q) For a medium length transmission line, A is--> **Equal to D**
- Q) For a two port linear passive bilateral network which of the following condition is true--> **$AD - BC = -1$**
- Q) The units of parameter B is----- --> **ohms**
- Q) For a transmission line of length not exceeding 80 km, it is used to lump the line capacitance at--> **The receiving end**
- Q) Transmission efficiency of a transmission line increases with the--> **Increase in power factor and voltage**
- Q) If in a short transmission line, resistance and inductive reactance are found to be equal and regulation appears to be zero, then the load will--> **Be 0.707 leading**
- Q) For a short line if the receiving-end voltage is equal to sending end voltage under loaded conditions--> **The receiving-end power factor is leading**
- Q) For unity p.f., the voltage regulation of a short transmission is--> **IR**
- Q) For zero power factor lagging, the voltage regulation of a short transmission line is--> **$I.X_L$**
- Q) Negative voltage regulation of transmission line means--> **$V_R > V_S$**
- Q) The generalized constants A, D of the transmission line have--> **No dimensions**
- Q) The generalized constants C of a transmission line have--> **siemens**
- Q) As the transmission voltage increases, the percentage resistance drop--> **Decreases**
- Q) The line constants of a transmission line are--> **Uniformly distributed**
- Q) In a short transmission line, voltage regulation is zero when the power factor angle of the load at the receiving end side is equal to--> **$\tan^{-1}(R/X)$**
- Q) -----compensation causes a reduction in system investment per kw of load supplied.--> **shunt**
- Q) While finding the relation between V_s and V_r , capacitance is neglected in--> **Short Transmission lines**
- Q) The shunt capacitance of line absorbs -----vars.--> **leading**
- Q) For a transmission line with resistance R , reactance X and negligible capacitance the parameter A in ABCD parameters is--> **1**
- Q) The units of B and C are respectively--> **Ohm and Mho**

Q)For fixed values of V_s and V_r the real power depends on -----> **Power angle.**

Q)Shunt conductance in power transmission line is due to leakage over the--> **insulators**

Q)The characteristic impedance of a transmission line with series impedance Z ohms per unit length and

shunt admittance Y mho per unit length is given by--> $\sqrt{\frac{Z}{Y}}$

Q)Bundled conductors reduce--> **Surface electric stress of conductor**

Q)Which parameter causes the power loss in the transmission line--> **resistance**

Q)In nominal π method,--> **half charging current flows over the full line.**

Q)Which method is the most efficient for the calculation of voltage regulation and efficiency--> **nominal π method**

Q)Long transmission line has a surge impedance of approximately--> **400 Ω**

Q)In a transmission line of negligible resistance, the surge impedance will be--> $\sqrt{L/C}$

Q)The ratio of capacitance of line to neutral and line to line capacitance of a transmission line having two conductors is--> **2**

Q)In case the characteristic impedance of a transmission line is equal to the load impedance--> **All the energy sent will be absorbed by the load.**

Q)The open circuit impedance and short circuit admittance of a line are 100 Ω and 0.01 mho respectively. What is the characteristic impedance of the line?--> **100 Ω**

Q)A cable has inductance of 0.22mH per km and capacitance of 0.202 F per km. the surge impedance of the cable is--> **33 Ω**

Q)Which of the following statements is correct?--> **Surge impedance and characteristic impedance for a transmission line are the same.**

Q)The characteristic impedance of a transmission line depends upon--> **Geometrical configuration of the conductors.**

Q)When two lines having constants A_1, B_1, C_1, D_1 , and A_2, B_2, C_2, D_2 are cascaded in series, the resultant value of A constant will be--> **$A_1 A_2 + B_1 C_2$**

Q)In order to reduce the inductive interference to parallel communication circuits to the minimum.--> **The conductors are transposed at regular intervals.**

Q)For a good voltage profile under no-load condition, a long line needs--> **Shunt reactors at the receiving end.**

Q)The surge impedance of a 400 kv, 100 km transmission line is 300 ohms. For a 200 km length the line surge impedance will be--> **300 ohms**

Q)Surge impedance values for cables are--> **Lower than those of overhead lines.**

Q)The propagation constant of a transmission line is given as--> $j\omega\sqrt{LC}$

Q)Characteristic impedance of a cable is usually in the range of--> **40 to 50 Ω .**

Q)The wavelength of travelling wave is equal to--> $\frac{v}{f}$

Q)For a 50Hz transmission line the wavelength is equal to--> **6×10^6 mts**

Q)The velocity of travelling wave in transmission line will be equal to--> **3×10^8 m/sec**

Q)The skin effect does not depend on--> **Ambient temperature**

Q)Surge impedance loading of a transmission line depends on--> **Receiving End Voltage**

Q)Surge impedance loading of any transmission line is--> $P_r = \frac{V_r^2}{Z_c}$ MW

Q)As the transmission voltage increases, the percentage resistance drop.--> **increases**

Q)The velocity of travelling wave in transmission line is--> **Equal to velocity of light**

Q)A travelling wave 400/1/50 means crest value of--> **400KV with rise time 1s with fall of 50s**

Q)A cable has inductance of 0.22mH per km and capacitance of 0.202F per km. the surge impedance of the cable is--> **33 Ω**

Q)The ABCD constants of a three phase transmission line are $A=D=0.8 \angle 1^\circ$, $B=170 \angle 85^\circ \Omega$ and $C=0.002 \angle 90.4^\circ \text{mho}$, the sending end voltage under no-load condition is--> **500kv**

Q)Consider the following statements: Surge impedance loading of a transmission line can be increased by
1. Increasing its voltage level 2. Addition of lumped inductance in parallel 3. Addition of lumped capacitance in series 4. Reducing the length of the line Which of the statements are correct?--> **1 and 3**

Q)The surge impedance of a three phase, 400kv transmission line is 400Ω. The surge impedance loading is--> **400MW**

Q)If a travelling wave travelling along a loss free overhead line does not result in any reflection after it has reached the far end, then the far end of the line is--> **Terminated into a resistance equal to surge impedance of the line**

Q)A transmission line can be considered as long transmission line, if its length exceeds--> **160km**

Q)The circuit constants of a long transmission line are considered as--> **Distributed parameters**

Q)The coefficient of reflection of voltage for a short circuited line is--> **-1**

Q)Consider the following statements Addition of lumped capacitances in parallel to a loss free transmission line increases
1. Characteristic impedance 2. Propagation constant 3. System stability 4. Charging current
Which of the statements are correct?--> **2 and 4**

Q)For a lumped inductive load, with increase in supply frequency as--> **P decreases, ϕ increases**

Q)The charging resistance of 50km length of the line is 1500Ω. What is the charging reactance for 100km length of the line?--> **750 ohms**

Q)The coefficient of reflection for current for an open ended line is--> **-1**

Q)In modeling of Medium transmission line using nominal T method, the value of constant A is equal to--
$$\frac{(1 + \frac{YZ}{4})}{2}$$

Q)In modeling of Medium transmission line using nominal T method, the value of constant B is equal to--
$$\frac{Z(1 + \frac{YZ}{4})}{2}$$

Q)In analysis of long transmission line, the method nominal T method is--> **Symmetrical and reciprocal**

Q)In rigorous solution to find the performance of long lines the value of circuit constant A is equal to-->
$$\cosh \sqrt{YZ}$$

Q)The propagation constant of a transmission line is given as--> \sqrt{ZY}

Q)The charging reactance of 50 Km length of line is 1500 ohm, the charge reactance for 100 km length of line will be--> **750 Ω**

Q)In rigorous solution to find the performance of long lines the value of circuit constant B is equal to-->
$$\sinh \sqrt{YZ}$$

Q)In analysis of long transmission line, the end condenser method is--> **Symmetrical but not reciprocal**

Q)Ferranti effect on long over head lines is experienced when it is--> **Lightly loaded**

Q)In modeling of Medium TL using nominal π method, the value of constant C is equal to--> $Y(1 + \frac{ZY}{4})$

Q)A long transmission line is said to be symmetrical if the line parameters--> **A=D**

Q)In rigorous solution to find the performance of long lines the value of circuit constant C is equal to--> $\frac{\sinh \sqrt{YZ}}{\sqrt{Y}}$

Q)In analysis of long transmission line, the method nominal π method is--> **Symmetrical and reciprocal**

Q)In modeling of Medium transmission line using nominal π method, the value of constant D is equal to--
> $\frac{(1+YZ)}{2}$