

**BE Semester- \_\_\_\_ (ELECTRICAL) Question Bank 4<sup>th</sup> sem[e-403]**

**(ELECTRICAL POWER SYSTEM-1)**

**All questions carry equal marks(10 marks)**

Q.1	Compare overhead transmission system with underground transmission system.
Q.2	Explain general construction of cable with neat diagram
Q.3	<u>Explain ACSR &amp; Bundle conductors</u>
Q.4	<u>List the various types of over head insulators &amp; explain pin type insulator</u>
Q.5	What is string efficiency? Explain various methods of improving string efficiency
Q.6	Explain with diagram (i) Pin type and (ii) Suspension type of insulators.
Q.7	Explain (i) Skin effect and (ii) Proximity effect.
Q.8	Derive the equation for inductance of three phase transmission line with unsymmetrical spacing. Assume transposition.
Q.9	Derive expression for capacitance of single phase transmission line taking into account the effect of earth.
Q.10	Explain (i) Voltage transformer earthing and (ii) Earthing transformer.
Q.11	Explain function of various equipments used in substation.
Q.12	Give brief note on transposition of conductor
Q.13	Enumerate types of neutral earthing and explain any one with neat sketch
Q.14	What are the different substation? Draw the single line diagram of any one type of substation
Q.15	What factors determine the economical limit of power factor correction? Show that the economical limit to which the power factor of a lagging power factor load can be raised is independent of the original. value of the power factor if the tariff consists of a fixed charge per KVA of maximum demand plus a flat rate per KWh.
Q.16	Explain the different types of distribution system with diagram.
Q.17	Discuss the disadvantage of low power factor.
Q.18	Explain ferranti effect.
Q.19	Explain following methods of earthings with diagram (i) Arc suppression coil earthing (ii) Voltage transformer earthing
Q.20	Discuss the various conductor materials used for overhead lines. What are their relative advantages and disadvantages.
Q.21	Explain different types of distribution system with diagram.
Q.22	<u>Explain the various kinds of supports used in electrical transmission lines</u>
Q.23	<u>What is stringing chart &amp; explain it's significance</u>
Q.24	<u>What is PU system ? explain the advantages of PU system</u>
Q.25	<u>What are the selection criteria for out door substation</u>
Q.26	Why it is necessary to earth neutral? Explain the difference between resistance and reactance grounding.
Q.27	What is an equivalent $\pi$ and equivalent T circuit of a long transmission line? Derive expression of parameters of these circuits in terms of line parameters

Q.28	What is importance of one line diagram of a power system? How it is drawn?
Q.29	What is importance of receiving end power circle diagram? Explain the steps of constructing it.
Q.30	Derive the ABCD constants for medium transmission line using Nominal $\Pi$ representation. Also write the expressions for voltage regulation and efficiency for the same line.
Q.31	Derive the expression for real power $P_R$ and reactive power $Q_R$ at receiving end of a medium transmission line in terms of transmission line constants (ABCD Constants)
Q.32	Explain the phenomena of arcing grounds. How does neutral grounding eliminate the arcing ground? Also enlist the advantages of neutral grounding.
Q.33	Using A, B, C and D constants of transmission line, $V_R$ as reference phasor and with other usual notations, derive expressions of active powers and reactive powers at both ends. Write expression of maximum power that can be transmitted at the receiving end.
Q.34	<u>Explain the steps to draw sending end circle diagram</u>
Q.35	<u>Explain the steps to draw universal circle diagram</u>
Q.36	<u>Explain the use of lightning arrester as safety device</u>
Q.37	<u>Explain the the use of synchronous condenser as power factor correction device</u>
Q.38	<u>With help of vector diagram explain the use of capacitor as power factor correction device</u>
Q.39	<u>Draw a single line diagram of substation &amp; explain the difference between ISOLATOR &amp; CIRCUIT BREAKER</u>
Q.40	<u>What is sag? Explain about it's calculations?</u>