

Course Name: EHVAC and HVDC Transmission

These questions are important but students should refer extended Question bank that I uploaded earlier to prepare for the Examination.

1.	Explain the Necessity of EHVAC transmission.									
2.	What is critical disruptive voltage?									
3.	Describe the types of MTDC system									
4.	List the order of harmonics of filter branches									
5.	What are the various types of HVDC circuit breakers?									
6.	Prove that the percentage power loss in EHVAC transmission line is independent of its length and it depends on the ratio of conductor resistance to the positive sequence reactance per unit length.									
7.	Explain and derive cosine law of variation of surface voltage gradient of bundled conductors									
8.	<p>A power of 2000mw is to be transmitted from Chandrapur thermal power station to Western part of Maharashtra over a distance of 800km. Use 400kV and 750kV transmission system for it. Calculate number of circuits with 40% series capacitor compensation and also calculate the total power loss. Assume $\delta=30^\circ$ and values of 'x' and 'r' as given below:</p> <table border="1" data-bbox="531 667 1206 763"><tr><td>System (kv)</td><td>400</td><td>750</td></tr><tr><td>x Ω/km</td><td>0.327</td><td>0.272</td></tr><tr><td>r Ω/km</td><td>0.031</td><td>0.0136</td></tr></table>	System (kv)	400	750	x Ω /km	0.327	0.272	r Ω /km	0.031	0.0136
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9.	Explain charge-voltage diagram with corona.									
10.	What is the procedure for measurement of Electrostatic field also write a note on Radio- Interference due to corona									
11.	Find the critical disruptive voltage and critical voltage for local and general corona on a 66kV, 3 phase overhead line consisting of three stranded copper of an equilateral triangle. Air temperature and pressure are 21°C & 73.6cm of Hg respectively. The conductor diameter is 10.4mm.									
12.	<p>Compare EHVAC and HVDC transmission on the following aspects.</p> <ul style="list-style-type: none">i) Bulk Power Transmissionii) Power flow controliii) Skin effectiv) Insulation levelv) Technical Performancevi) Economical Consideration									
13.	Describe the different kinds of HVDC link along with their advantages and disadvantages and application.									
14.	Explain the factors to be considered for the selection of a site for Earth Electrode									
15.	Draw single line schematic diagram of AC harmonic filter in a typical HVDC substation.									
16.	Draw single line diagram of DC harmonic filter in a typical HVDC substation state the order of harmonics of filter branches.									
17.	<p>Explain the following:</p> <ul style="list-style-type: none">i) Single frequency tuned filter.ii) Double frequency tuned filter.									
18.	Describe the function of MRTB and its applications.									
19.	Derive the expression for the reactive power requirement of HVDC substations.									
20.	Compare the protection philosophy of EHVAC and HVDC transmission.									