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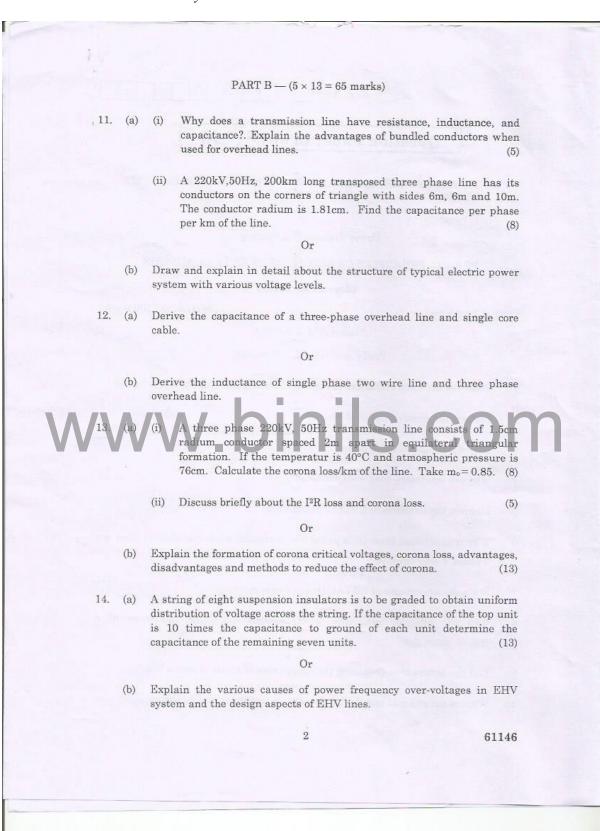
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	Reg. No. :
today costs	Question Paper Code: 61146
M E /M Tec	th DEGREE EXAMINATIONS, NOVEMBER/DECEMBER 2022.
M.B./M. Tec	Elective
	Power Systems Engineering
PS 500-	4 – PRINCIPLES OF ELECTRIC POWER TRANSMISSION
	(Regulations 2017)
Time : Three ho	ours Maximum: 100 marks
	Answer ALL questions.
	PART A — $(10 \times 2 = 20 \text{ marks})$
2. List out th 3. Why shou	the main requirements of the insulating materials used for cable? The disadvantages of corona? If the reactive power transfer in lines be minimized?
	nsulators used with overhead lines?
5. Mention t	he demerits of HVDC transmission.
	smission lines are 3 phase 3-wire circuits while distribution lines are wire circuits?
7. State the	advantages of EHVAC transmission system.
8. Why the transmiss	effective resistance is more than the static resistance of a sion line?
9. List the fa	actors that governing the capacitance of a transmission line.
10. What is tl	he effect of bundled conductors on transmission line inductance?

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15. (a) An existing 400 kV 3-phase AC line transmitting a power 100MW is converted into bipolar DC line. Evaluate the DC voltage/pole and DC line losses, if the resistance of each conductor is 0.01 ohm. Assume power factor = 0.90. (13)

Or

(b) What are the methods of testing insulators? Explain the different interconnection methods of HVDC into AC system. Mention its advantages and disadvantages.

PART C — $(1 \times 15 = 15 \text{ marks})$

16. (a) List out the advantages of higher operating voltage. And then compare EHVAC system with HVDC system. Discuss in detail the problems associated with EHV AC transmission. Also state how these problems are being solved? Describe briefly the types of HVDC links.

Or

(b) Explain with a neat layout the modern EHV system. What is the highest voltage level available in India for EHV transmission? Determine the capacitance and charging current per unit length of an overhead transmission line having 3-phase, 3-wire structure with horizontal structure. Further assume that the radius of the conductors is 15mm

and spacing between two closely situated conductors is 2.5m

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