

Seat No.	
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B.E. (Electrical) (Part - IV) (Semester - VIII) Examination, April - 2016

EHVAC (Elective - II)

Sub. Code : 49431

Day and Date : Sunday, 24 - 04 - 2016

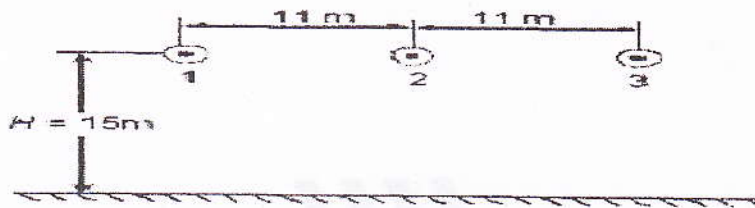
Total Marks : 100

Time : 03.00 p.m. to 06.00 p.m.

- Instructions :**
- 1) Attempt any three questions from each Section.
 - 2) Figures to right indicate full marks.
 - 3) Assume suitable data if necessary.

SECTION - I

- Q1) a)** Derive the equation for voltage gradient distribution on sub-conductors of a Bundle. [8]
- b)** Explain and compare EHVAC Transmission lines of different system of Voltages on the basis of power handling capacity and line loss. [8]
- Q2) a)** Explain the effect of temperature rise on current carrying capacity of conductor. Explain the heat balance equation. [8]
- b)** Explain Bundled conductors. Derive the expression for equivalent radius of bundled conductor. [8]
- Q3) a)** The dimensions of a 3 phase 400 KV line are $H=15\text{m}$, $S=11\text{m}$ phase separation, conductor $2 \times 3.18\text{cm}$ and $B=45.72\text{cm}$. Calculate the capacitance Matrix of 3 phase 400 KV line for un-transposed configuration. [8]



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- b) Explain the concept of line energization with tapped charge voltage. [8]

Q4) Write short notes on any three:

[3×6=18]

- a) Corona Loss Formulae.
- b) Audible noise characteristics and limits.
- c) Reflection and refraction of travelling waves.
- d) Sequence Inductance of 3 phase transmission line.

SECTION - II

Q5) a) Explain the general principles of lightning protection problem in detail. [8]

b) What is mean by ferro resonance overvoltage? Explain in detail. [8]

Q6) a) Explain the concept of lightning stroke mechanism in detail. [8]

b) Explain the concept of insulation co-ordination. [8]

Q7) a) Explain the principles of travelling wave protection for EHVAC lines. [8]

b) Explain the use of power circle diagram in detail. [8]

Q8) Write short notes on any three:

[3×6=18]

- a) Insulation levels.
- b) Over voltage and their types.
- c) Lighting arrestors and its characteristics.
- d) SSR and its effects.

