Enrollment No: _____ Exam Seat No:_____

C.U.SHAH UNIVERSITY

Summer Examination-2017

Subject Name: EHVAC & HVDC Transmission

Subject Code: 4TE08HVT1 **Branch:**B.Tech (Electrical)

Semester: 8 **Date: 18/04/2017** **Time: 02:30 To 05:30** **Marks: 70**

Instructions:

(1) Use of Programmable calculator & any other electronic instrument is prohibited.
(2) Instructions written on main answer book are strictly to be obeyed.
(3) Draw neat diagrams and figures (if necessary) at right places.
(4) Assume suitable data if needed.

Q-1 **Attempt the following questions:** **(14)**

a) Which among these is a part of HVDC link? **(1)**
(a) Two earth electrodes
(b) Converter valves
(c) Bipolar DC line
(d) All of these.

b) What type of insulation is preferred for DC smoothing Reactors? **(1)**
(a) Air
(b) Oil
(c) Paper
(d) Varnish.

c) Voltages under Extra High Voltage are **(1)**
(a) 1 kV and above
(b) 11 kV and above
(c) 132 kV and above
(d) 330 kV and above.

d) 750 kV is termed as **(1)**
(a) Ultra high voltage.
(b) High voltage
(c) Extra high voltage
(d) Medium high voltage

e) The chances of corona are maximum in **(1)**
(a) domestic wiring
(b) distribution lines
(c) transmission lines
(d) all of the above..

f) In sphere gaps, the sphere are made of **(1)**
(a) aluminum
(b) brass

(c) bronze
(d) any of the above.

g) Corona effect can be identified by **(1)**
(a) bushy sparks
(b) faint violet glow
(c) red light
(d) blue light

h) Which of the following statements is/are true regarding HVDC? **(1)**
(a) here is no skin effect in dc line
(b) HVDC can utilize earth for its return path
(c) Corona loss is very much reduced in the dc line
(d) all of the above

i) Which among these HVDC projects are commissioned in India? **(1)**
(a) Rihand – Delhi HVDC
(b) Vindhyachal Back to Back only
(c) Chandrapur only
(d) All of these

j) At what location are the shunt capacitors installed for voltages above 33 kV and above? **(1)**
(a) Are located near the motors
(b Are installed in distribution substations
(c) Both (A) and (B
(d) None of these.

k) Which method of voltage control is applied for long line AC transmissions? **(1)**
(a) Switching by shunt capacitors
(b) Tap changing transformers
(c) Switching by shunt reactors
(d) Static Var sources.

l) What is application of HVDC Transmission system? **(1)**

m) What is Ferro resonance? **(1)**

n) Write standard voltage of EHV ac and HVDC transmission system. **(1)**

Attempt any four questions from Q-2 to Q-8

Q-2 **Attempt all questions** **(14)**

a) Explain types of high voltage direct current system. **(7)**

b) Write short note on corona and corona loss formulas. **(7)**

Q-3 **Attempt all questions** **(14)**

a) Explain Radio interference and Audible noise. **(7)**

b) Compare EHVAC&HVDCtransmission line. **(7)**

Q-4 **Attempt all questions** **(14)**

a) Explain measurement of peak value of voltage with using sphere gap arrangement. **(7)**

b) What is Cockcroft Walton voltage multiplier circuit? Explain in detail. **(7)**

Q-5 **Attempt all questions** **(14)**

a) Draw and explain convertor control characteristics. **(7)**

	b)	What do you meant by principle of dc link Control? Explain in details.	**(7)**
Q-6		**Attempt all questions**	**(14)**
	a)	Write Short note on Smoothing reactors.	**(7)**
	b)	What is MTDC? Explain multi terminal dc systems.	**(7)**
Q-7		**Attempt all questions**	**(14)**
	a)	Explain starting and stopping of dc link.	**(7)**
	b)	Write short note on ac and dc filters of HVDC system.	**(7)**
Q-8		**Attempt all questions**	**(14)**
	a)	Explain protection against over currents and over voltage of HVDC transmission system.	**(7)**
	b)	Write Short note on converter station and choice of converter configuration.	**(7)**