Total No. of Printed Pages:2

SUBJECT CODE NO:- P-281

FACULTY OF ENGINEERING AND TECHNOLOGY

B.E.(EEP/EE) Examination MAY/JUNE-2016

High Voltage Engineering

(Revised)

[Time: Three Hours] **[Max Marks:80]**

"Please check whether you have got the right question paper."

N.B i) Q.No.1 and Q.No.6 are compulsory.
ii) Attempt **any two** questions from the remaining questions of each section.
iii) Assume suitable data, wherever necessary.

Section A

Q.1 Solve **any five** 10

a) What do you mean by composite dielectrics?
b) What is the principle of charge simulation method?
c) Define electric field intensity.
d) What is treeing and tracking?
e) What since the difference between commercial liquid and pure liquids.
f) List out various breakdown mechanism in solid dielectrics.
g) What is need for generating impulse current?
h) Draw a circuit diagram of simple voltage doubler.

Q.2 a) Explain with neat diagram the procedure to control electric field intensity in HV equipment. 07
b) What is "finite element method"? Give the outline of this method for solving the field problems. 08

Q.3 a) Explain Townsend's criteria for breakdown. 07
b) Explain streamer theory of breakdown gages. 08

Q.4 a) Explain with neat sketch working of 'Van De Graff 'generator. 07
b) Explain the different types of cascade connection of transformer for producing very high a.c voltage. 08

Q.5 Solve **any three** (Short notes) 15

a) Surge voltage , its distribution and control
b) Paschens law
c) Tripping and control of impulse generator
d) Difference between pure and commercial liquid insulator.

Section B

Q.6 Solve **any five** 10

a) What are the advantages of CVT measurement in HVAC?
b) What is Rogowski coil?
c) List the factors that are influencing the peak voltage measurement using sphere gap.
d) State the function of expulsion gap.
e) Define lightening phenomena.
f) Define creepage distance.
g) Name the different types of tests conducted on high voltage.
h) What is significance of impulse test?

Q.7	a)	What do you mean by economic consideration for insulation co-ordination explain.	07
	b)	What are the mechanisms by which lightning strokes develop induce overvoltage on overhead power lines.	08
Q.8	a)	Explain various for measuring high d.c and a.c currents.	07
	b)	What are the requirements of sphere gap for measurement of high voltage? Write the disadvantages of sphere gap for measurements.	08
Q.9	a)	State and explain dielectric constant with loss component.	07
	b)	Briefly explain how partial discharge in an insulation system or equipment can be detected and displayed.	08

Q.10 Write short notes (**any three**) 15

1) Testing of surge arrester.
2) Testing of isolators and circuit breakers
3) CRO measurements
4) Radio interference measurement.