

Reg. No.

--	--	--	--	--	--	--	--	--	--

B.E. / B.TECH. DEGREE EXAMINATIONS, DEC 2019

Seventh Semester

EE16703 – HIGH VOLTAGE ENGINEERING*(Electrical and Electronics Engineering)***(Regulation 2016)**

Time: Three Hours

Maximum : 100 Marks

Answer ALL questions

PART A - (10 X 2 = 20 Marks)

	CO	RBT
1. What are the different types of over voltage?	1	U
2. What is back flash over?	1	U
3. Write the properties of good dielectric.	2	R
4. What is meant by time lag?	2	U
5. Mention the specifications of standard impulse wave.	3	U
6. What are the disadvantages of half wave rectifier circuit?	3	U
7. What is the basic principle of Hall generator?	3	U
8. Define CVT.	3	R
9. What are type and routine test?	4	U
10. Define Disruptive discharge voltage.	4	R

PART B - (5 X16 = 80 Marks)

11. (a) What are the causes for switching and power frequency over voltages? How are they controlled in power system? **(16)** 1 AP
- (OR)**
- (b) Explain the different theories of charge formation in clouds. Derive the expression for mathematical modeling of lightning. **(16)** 1 AP
12. (a) (i) Explain the various mechanisms of vacuum break down. **(8)** 2 AP
- (ii) Discuss the different mechanisms in Solid break down. **(8)** 2 AP

(OR)

- (b) What is meant by Ionization process? Derive the expressions for gaseous breakdown by Townsend's first and second Ionization coefficient. (16) 2 AP
13. (a) Describe with a neat sketch the working of a Van De Graff generator. What are the factors that limit the maximum voltage obtained? (16) 3 AP
- (OR)**
- (b) Explain the different methods of producing switching impulses in test laboratories. Draw the typical impulse current generator circuit and explain its operation and applications. (16) 3 AP
14. (a) Describe the construction, principle of operation of a Generating voltmeter with neat sketch and give its applications and limitations. (16) 3 AP
- (OR)**
- (b) Explain the construction and procedure for measurement of impulse voltage using standard sphere gap. Explain the parameters and factors that influence the sphere gap measurement. (16) 3 AP
15. (a) (i) Explain the method of impulse testing of high voltage transformers. What is the procedure adopted for locating the failure. (8) 4 AP
- (ii) What are the different power frequency tests done on insulators? Mention the procedure for testing. (8) 4 AP
- (OR)**
- (b) (i) Discuss the different high voltage tests conducted on bushings. (8) 4 AP
- (ii) Explain the various tests conducted in high voltage cables. (8) 4 AP