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**Question Paper Code: 36303**

B.E. / B.Tech. DEGREE EXAMINATION, APRIL 2019

Sixth Semester

Electrical and Electronics Engineering

01UEE603 - HIGH VOLTAGE ENGINEERING

(Regulation 2013)

Duration: Three hours

Maximum: 100 Marks

Answer ALL Questions

PART A - (10 x 2 = 20 Marks)

1. State the different kinds of over voltage.
2. List the sources of switching surges.
3. What is ionization by collision?
4. Draw cascaded voltage doubler circuit.
5. Write the electrical properties of liquid dielectric.
6. What are the impulse wave specifications?
7. List various problems involved in high voltage measurement.
8. What is generating voltmeter?
9. Point out the standard specifications of impulse voltage wave.
10. List out various type of test on cable.

PART - B (5 x 16 = 80 Marks)

11. (a) Describe protection against lightning over voltages and switching surges of short duration. (16)

Or

- (b) What are the causes for power frequency over voltages? How they are controlled in power system? (16)

12. (a) Discuss the three theories that explain breakdown in commercial liquid dielectrics. (16)

Or

- (b) Describe conduction and breakdown in pure liquid. (16)

13. (a) Give the Marx circuit arrangement for multistage impulse generator. How is the basic arrangement modified to accommodate the wave time control resistances? (16)

Or

- (b) With diagram describe working of tripping and control of impulse generator. (16)

14. (a) With neat sketch explain the principle of operation of an electrostatic voltmeter for HVAC measurement. What are the merits and demerits? (16)

Or

- (b) With diagram explain horizontal arrangement of sphere gap for measurement of high DC, AC and impulse voltages. (16)

15. (a) Describe the method of impulse testing of high voltage transformers. What is the procedure adopted for locating the failure? (16)

Or

- (b) Explain various types of high voltage test on transformer. (16)