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Question Paper Code: 36303

B.E. / B.Tech. DEGREE EXAMINATION, MAY 2018

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 parameters and characteristics of lightning strokes.

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. Draw a simple voltage doubler circuit.

7. Comment on Tesla coil.

8. What are the advantages of generating voltmeter?

9. Point out the standard specifications of impulse voltage wave.

10. Draw the waveform of standard impulse with specifications.

PART - B (5 x 16 = 80 Marks)

11. (a) Enumerate the different theories of charge formation in thunder clouds.   (16)

Or

(b) Briefly describe the principles observed in the Bewley's lattice diagram. Also draw the lattice diagram. (16)

12. (a) Explain in detail the various mechanism of vacuum breakdown. (16)

Or

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

13. (a) Derive the expression for ripple and regulation in cascaded voltage multiplier circuits. (16)

Or

(b) Give the Marx circuit arrangement for multistage impulse generator. How is the basic arrangement modified to accommodate the wave time control resistances. (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) Explain in detail about capacitive voltage transformer? List the advantages and disadvantages. (16)

15. (a) Discuss the various power frequency and impulse tests on insulators. (16)

Or

(b) What are the significance of short circuit tests on circuit breakers? How are they conducted in HV laboratories? (16)

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