

Reg No.: _____

Name: _____

APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY
B.Tech Degree S6 (S,FE) Examination December 2025 (2019 Scheme)

Course Code: EET342

Course Name: HIGH VOLTAGE ENGINEERING

Max. Marks: 100

Duration: 3 Hours

PART A

Answer all questions, each carries 3 marks.

Marks

- | | | |
|----|--|-----|
| 1 | Elaborate the working of a simple voltage doubler circuit with a neat diagram. | (3) |
| 2 | Define Ripple voltage and Ripple factor. | (3) |
| 3 | What do you mean by Loss angle. | (3) |
| 4 | Recall the requirements on a partial discharge measuring system. | (3) |
| 5 | Explain Insulation coordination procedure. | (3) |
| 6 | Illustrate the reasons for overvoltage in power systems. | (3) |
| 7 | List the main components of HVDC link. | (3) |
| 8 | Describe the function of UPFC. | (3) |
| 9 | Summarize the objectives of High voltage testing. | (3) |
| 10 | Describe electrostatic particle precipitation. | (3) |

PART B

Answer one full question from each module, each carries 14 marks.

Module I

- | | | |
|----|---|------|
| 11 | a) Explain the working principle of Electrostatic generator with the help of neat diagram | (10) |
| | b) Describe the working of a half wave rectifier circuit with a neat diagram | (4) |

OR

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|----|--|------|
| 12 | a) With a schematic describe the working of Marx impulse generator circuit | (10) |
| | b) What is a cascaded transformer? Why cascading is done? | (4) |

Module II

- | | | |
|----|--|------|
| 13 | a) Recall the operating principle of Electrostatic voltmeter with the help of neat diagram | (10) |
| | b) What do you mean by Dissipation factor | (4) |

OR

- 14 a) Compare Electrostatically short and electrostatically long sensors (10)
b) Outline a Resistance potential divider with the help of a neat diagram (4)

Module III

- 15 a) Elaborate deterministic and statistical approach for the determination of coordination withstand voltage (10)
b) Define Required withstand voltage and standard withstand voltage (4)

OR

- 16 a) Explain the working principle of Surge arresters with the help of a neat diagram (10)
b) Show the characteristics of Surge diverter and Surge arrester (4)

Module IV

- 17 Describe the main components of HVDC link with the help of neat diagrams (14)

OR

- 18 a) Describe the working of static VAR compensator with the help of neat diagram (10)
b) List the advantages of HVDC transmission system (4)

Module V

- 19 a) Explain high voltage testing of Transformers (10)
b) Relate Fifty percent and hundred percent flashover voltage (4)

OR

- 20 a) Explain high voltage testing of circuit breaker (10)
b) What do you mean by Surge capacitor (4)
