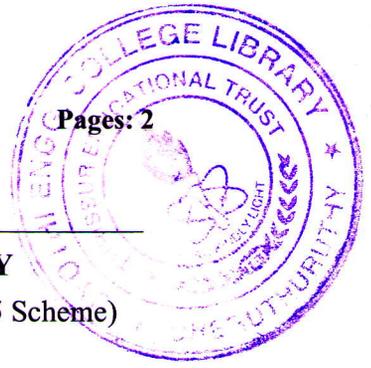


Reg No.: _____

Name: _____

APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY

Fifth Semester B.Tech Degree (S,FE) Examination January 2022 (2015 Scheme)

**Course Code:EE369****Course Name: HIGH VOLTAGE ENGINEERING**

Max. Marks: 100

Duration: 3 Hours

PART A*Answer all questions, each carries 5 marks.*

Marks

- | | | |
|---|--|-----|
| 1 | Explain half wave and full wave rectifier circuits for high voltage generation. | (5) |
| 2 | How can you generate high voltage AC using the principle of series resonance? | (5) |
| 3 | Define an impulse voltage along with its tolerance levels. | (5) |
| 4 | What is Chubb-Fortescue method used for? Explain its principle. | (5) |
| 5 | State the objectives of high voltage testing. | (5) |
| 6 | What is RIV ? How can you measure it? | (5) |
| 7 | Explain in brief the various tests on insulators. | (5) |
| 8 | What is the importance and factors to be considered in grounding of High Voltage laboratories? | (5) |

PART B*Answer any two full questions, each carries 10 marks.*

- | | | |
|----|---|------|
| 9 | Explain Van de-Graaff generator along with its principle of operation. | (10) |
| 10 | a) Draw circuit configuration of a 3 stage Cockcroft-Walton voltage multiplier with labelling. | (5) |
| | b) Draw schematic diagram of a 3 stage cascaded transformer arrangement. Label each part and show the voltage levels. | (5) |
| 11 | How can you generate high frequency high voltage AC using Tesla coil ? Explain the working in detail. | (10) |

PART C*Answer any two full questions, each carries 10 marks.*

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|----|---|------|
| 12 | Mention the components in an impulse voltage generator? Explain in detail, the triggering and synchronization system of an impulse voltage generator. | (10) |
| 13 | a) Draw circuit configuration of a Marx impulse voltage generator with proper labelling. | (5) |
| | b) Briefly explain AC and DC field sensors and its principle. | (5) |

- 14 Explain the theory behind and the working of an Electrostatic voltmeter. (10)
Mention its advantages.

PART D

Answer any two full questions, each carries 10 marks.

- 15 How Partial Discharge is measured using the straight detector method. Explain (10)
in detail.
- 16 a) Draw and explain the Partial Discharge Equivalent Circuit. (5)
b) Write a note on the classification of High voltage laboratories. (5)
- 17 Explain in detail the various High Voltage Tests done on Transformers. (10)
