F **06000EE369122002** **Pages: 2**

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.

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. Mention its advantages. (10)

PART D

Answer any two full questions, each carries 10 marks.

15 How Partial Discharge is measured using the straight detector method. Explain in detail. (10)

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)

****