ADAMAS UNIVERSITY PURSUE EXCELLENCE	**ADAMAS UNIVERSITY** **END-SEMESTER EXAMINATION : JANUARY 2021** (Academic Session: 2020 – 21)		
Name of the Program: (Example: B. Sc./BBA/MA/B.Tech.)	B.Tech	**Semester:** (I/III/ V/ VII/IX)	VII
Paper Title :	Power Electronics	**Paper Code:**	EEE44103
Maximum Marks :	40	**Time duration:**	3 hours
Total No of questions:	8	**Total No of Pages:**	2
(Any other information for the student may be mentioned here)			

Answer all the Groups

Group A

Answer all the questions of the following $5 \times 1 = 5$

1. **a)** What is latching current?

b) What are the different thyristor protection techniques?

c) Classify different types of inverter.

d) What is the application of freewheeling diode in a rectifier circuit?

e) Write the expression for average output voltage of a single-phase half wave rectifier with RL load.

GROUP –B

Answer *any three* of the following $3 \times 5 = 15$

2. Discuss the V-I characteristics of thyristor.

3. Explain the working principle of on-off control method of an AC voltage controller.

4. With proper circuit, explain the working of a half bridge inverter circuit.

5. A single phase full bridge inverter has a resistive load of R=5 Ohm and the DC input voltage of 220 Volt. Compute:

a) RMS output voltage

b) Output power

GROUP –C

Answer *any two* of the following $2 \times 10 = 20$

6. What is commutation of a thyristor? What are the different types of commutation? Explain the operation of any two types of commutation. **[2+2+6]**

7. With proper circuit and voltage waveforms, explain the working of step up and step down chopper. **[5+5]**

8. A single phase full converter with RLE load. Given V_s = 230 Volt, 50Hz for R = 2 **Ω**, L= 10mH, E=100Volt. For firing angles of 30º Find output current and voltage inn case the load current extinguishes at β=200º.
