

Roll No.

--	--	--	--	--	--	--	--	--	--	--	--

Total No. of Pages : 02

Total No. of Questions : 09

B.Tech. (EE) (Sem.-5)
POWER ELECTRONICS
Subject Code : EE-309
M.Code : 57026

Time : 3 Hrs.

Max. Marks : 60

INSTRUCTIONS TO CANDIDATES :

1. SECTION-A is **COMPULSORY** consisting of **TEN** questions carrying **TWO** marks each.
2. SECTION-B contains **FIVE** questions carrying **FIVE** marks each and students have to attempt any **FOUR** questions.
3. SECTION-C contains **THREE** questions carrying **TEN** marks each and students have to attempt any **TWO** questions.

SECTION-A**1. Write briefly :**

- a) What is TRIAC?
- b) What is holding current?
- c) What do you mean by dv/dt triggering?
- d) What is load commutation?
- e) What is the need of a chopper?
- f) List the advantages and disadvantages of cycloconverters.
- g) Discuss the need of an Inverter.
- h) What do you mean by PWM control?
- i) What do you mean by steady state analysis? Discuss.
- j) Explain the importance of phase angle control.

SECTION-B

2. Explain the operation of a SCR with the help of its static VI characteristics.
3. Explain the operation of a Single phase half wave controlled rectifier.
4. Describe the working of class D commutation with relevant diagrams.
5. Explain the reduction of harmonics in the inverter output voltage using PWM.
6. Explain the basic circuit and operation of a single-phase cycloconverter.

SECTION-C

7. Explain :
 - a) Series operation of SCR
 - b) Parallel operation of SCR
8. Explain :
 - a) Class B commutation
 - b) Two quadrant chopper
9. Discuss :
 - a) Series inverter
 - b) Dual Converter

NOTE : Disclosure of Identity by writing Mobile No. or Making of passing request on any page of Answer Sheet will lead to UMC against the Student.