

S.B. Roll. No.....

POWER ELECTRONICS
4th Exam/ECE/6163/Jun'2022
(For 2018 Batch Onwards)

Duration: 3Hrs.

M.Marks:75

SECTION-A

Q1. Give one line answers for the following questions.

15x1=15

- a. What is Natural commutation?
- b. What is hard driving or over driving?
- c. What is latching current?
- d. Define holding current.
- e. What is the disadvantage of PWM control.
- f. What is the conduction angle of SCR?
- g. Define inverter.
- h. Give two application of cyclo-converter.
- i. Give two advantages of DC motor.
- j. What is regulated power supply.
- k. What is line regulation?
- l. What is off-line UPS?
- m. Full form of HVDC.
- n. Full form of SMPS.
- o. Give the advantage of GTO over BJT.

SECTION-B

Q2. Attempt any six questions.

6x5=30

- i. Write a short note on HVDC?
- ii. Differentiate between DC drives and AC drives.
- iii. Explain how you will control the speed of DC motor using chopper drive.
- iv. Differentiate between Converter drives and chopper drives.
- v. Describe the principle of operation of step-down chopper.
- vi. Explain programmable uni-junction transistor.
- vii. Compare the features of SCR and TRIAC.
- viii. Describe the working of single-phase half wave controlled rectifier with load.

SECTION-C

Q3. Attempt any three questions.

3x10=30

- a. Draw the V-I characteristic of a DIAC and explain its working.
- b. What do you mean by choppers? Explain the principle of operation dual converters. List their types.
- c. Draw and explain the block diagram of dual converter.
- d. Explain with the help of a circuit diagram, the working principle of a single phase full wave fully controlled bridge rectifier.
- e. Explain the following (any two):-
 - i) SMPS
 - ii) Class D chopper
 - iii) GTO