

2101182

BACHELOR OF VOCATION

Solar Technology

Subject: Power Electronics

Subject Code: EE-602

Semester: Third

January 2021

Theory (External): 35 Marks

Time: 03 Hours

Instructions to the Students

1. This Question paper consists of two Sections. All sections are compulsory.
2. Section A comprises 10 questions of objective type in nature. All questions are compulsory. Each question carries 1 mark.
3. Section B comprises 8 essay type questions out of which students need to do any 5. Each question carries 5 marks.
4. Read the questions carefully and write the answers in the answer sheets provided.
5. Do not write anything on the question paper.
6. Wherever necessary, the diagram drawn should be neat and properly labelled

Roll Number

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SECTION –A (SHORT/OBJECTIVE TYPE QUESTIONS)
(10x1=10 Marks)

- A List any two advantages of TRIAC over SCR
- B Why are IGBT becoming popular in PE based applications?
- C Define the term pinch of voltage of MOSFET
- D Write down the applications of thyristor.
- E Why do we use series and parallel combination of SCR ?
- F Define Silicon Asymmetrical Switch(SAS).
- G Why do regulators always use negative feedback? Why not positive feedback?
- H Define intrinsic stand off ratio
- I What is the basic idea of silicon controlled Switch operation (SCS)
- J Draw the symbol of P channel of MOSFET

SECTION –B (ESSAY TYPE QUESTIONS)
(5x5=25 Marks)

1. Discuss the different modes of operation of SCR's with the help of its static VI characteristics
2. Explain basic construction, characteristics and application of DIACs
3. Explain the Power control using 90° variable half wave rectifier circuit
4. Explain the construction and working principle of Uni Junction transistor (UJT)
5. Write a note on single phase to single phase step down cycloconverter
6. With the neat diagram explain the operation and characteristics of JFET (junction field effect transistor)
7. Write a short note on full wave rectifier using DIAC-TRIAC phase control circuit.
8. Write short notes on any two of the following
 - (i) Silicon Unilateral Switch (SUS)
 - (ii) Enhancement type CMOS

==END OF PAPER==