

B.Voc Mechatronics
Subject: Digital and Power Electronics
Subject Code: ECE-601
Semester: Third
Session: September 2022
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 short answers 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 answersheets provided.
5. Do not write anything in the question paper.
6. Whenever necessary, the diagram drawn should be neat and properly labeled.

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SECTION – A (OBJECTIVE TYPE QUESTIONS)
(10 × 1 = Marks)

- A. What is meant by cyclo converter?
- B. Give the applications of power electronics.
- C. Step down cyclo converter requires..... Commutation?
- D. What is meant by VSI?
- E. What are the methods of voltage control inverters?
- F. What is meant by inverter?
- G. Why IGBT is very popular now a day?
- H. What are the different types of flip-flops?
- I. What are the types of power transistors?
- J. The inputs of a NAND gate are connected together. The resulting Circuit is

SECTION – B (ESSAY TYPE QUESTIONS)
(5×5 = 25)

1. Explain in brief about cyclo-converters and what the need is of cyclo-converters?
2. What are the different triggering circuits used for SCR. Explain with suitable diagrams?
3. Explain in brief about Snubber Circuit with diagram?

Draw and explain the static and dynamic characteristics of BJT & MOSFET?

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5. What is a master slave flipflop? Explain with a logic diagram & block diagram?
6. What are the applications of Flip-flop?
7. Convert the following decimal numbers to the indicated bases
7562.45 to octal 1938.257 to hexadecimal 175.175 to binary.
8. Show that a full adder can be constructed with two half adder and an OR gate?

END OF PAPER