

FACULTY OF SCIENCE

B.Sc. (CBCS) III-Year (V-Semester) Regular Examinations, Dec-2022/Jan-2023

Electronics-V/A

(Digital Electronics and Microprocessor)

Time: 3 Hours

Max Marks: 80

SECTION-A

(4x5=20 Marks)

Answer any Four questions from the following

1. Write a brief note on half adder.
2. What is the principle of operation of a Multiplexer?
3. Explain Serial-in Parallel-out shift register.
4. What is an instruction cycle? Draw the timing diagram of fetch cycle.
5. Write a short on Stack and Subroutines.
6. Discuss subtraction using 2's complement method with example.

SECTION-B

(4x15=60 Marks)

Answer all the following questions

7. (a) Design AND, OR, and NOT gates by using NAND gate and write their truth tables and operation.
(OR)
(b) Write an essay on Hexadecimal number system and conversion of Hex numbers into binary and Octal numbers.
8. (a) What is a Karnaugh map? Explain how to construct a 4-variable map and solve it with an example.
(OR)
(b) What is a Binary-to-Octal Decoder? Explain its working with the help of truth table and circuit.
9. (a) Explain the working of Clocked RS Flip-flop with its logical diagram and truth table.
(OR)
(b) Explain 4-bit Johnson ring counter and give its truth table.
10. (a) Discuss the architecture of 8085 microprocessor and explain each block.
(OR)
(b) Explain logical and data transfer operations in 8085 microprocessor with suitable examples.