TB245438W

Reg. No :.....

Name :.....

BACHELOR'S DEGREE (C.B.C.S) EXAMINATION, NOVEMBER 2024

2022 ADMISSIONS REGULAR

SEMESTER V - CORE COURSE (PHYSICS)

PH5B08B18 - Digital Electronics and Programming

Time : 3 Hours **Maximum Marks : 60**

Part A

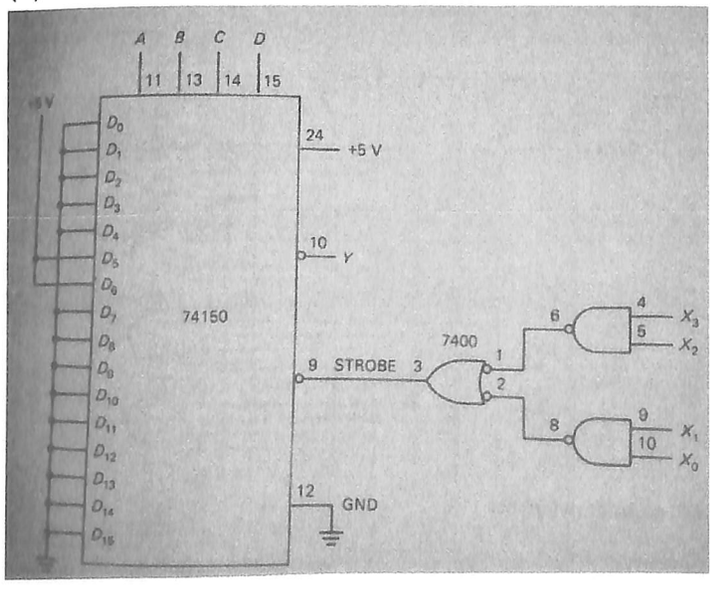
I. Answer any Ten questions. Each question carries 1 marks **(10x1=10)**

1. Differentiate analog and digital signals. Give examples for each.
2. Write the basic laws of Boolean algebra.
3. Define Max terms and Minterms.
4. Differentiate combinational and sequential circuits. Give examples.
5. What do you mean by BCD? Write the BCD of 628 and 429.
6. Compare sequential and combinational logic circuits.
7. What are registers. Mention the 4 types of registers.
8. Write a C++ programme that displays the text "Greetings".
9. Give a note on whitespace in C++.
10. Write examples of logical operators in C++.
11. What is a header file in C++?
12. Write any three examples of escape sequences in C++.

Part B

II. Answer any Six questions. Each question carries 5 marks **(6x5=30)**

13. Explain why NAND and NOR gates are considered as Universal gates.
14. Explain the working of a full adder circuit. Give its truth table, logic circuit and Boolean expressions for Sum and Carry.
15. Identify the circuit given. What does Y equal for the i/p conditions
    (a) ABCD =0111, x0x1x2x3 =0011 (b) ABCD =1001, X0X1X2X3 = 0110 (c) ABCD =1111, X0X1X2X3 = 0001 ?



16. Explain the working of a positive edge triggered JK flip flops.
17. How can we use flip flops for shifting serial in serial out? Explain with the method of data movement.
18. On a certain day, the British pound was equivalent to 1.487 U.S. Dollars. Write a programme that allows the user to enter an amount in Dollars and then displays this value converted into the monetary unit of pound.
19. Write a programme that prints 5 lines of 12345 using nested loops.
20. Write a programme that prints out the cubes of the numbers from 1 to 10.
21. Demonstrate 'while' loop using fibonacci series.

Part C

III. Answer any Two questions. Each question carries 10 marks **(2x10=20)**

22. Discuss the construction of 2 variables, 3 variables and 4 variables karnaugh map with examples. Illustrate how quad,octet and overlapping eliminate the variables .
23. Explain how a digital signal of 1000 is converted to analog equivalent voltage using ladder type network.
24. Discuss the initialization of arrays and accessing of array elements using examples.
25. Write a function called zeroSmaller() that is passed two int arguments by reference and then sets the smaller of the two numbers to 0. Write a main() program to exercise this function.