TB245455Z

Reg. No :.....

Name :.....

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

2021 ADMISSIONS SUPPLEMENTARY (SAY)

SEMESTER V - CORE COURSE (PHYSICS)

PH5B08B18 - Digital Electronics and Programming

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

Part A

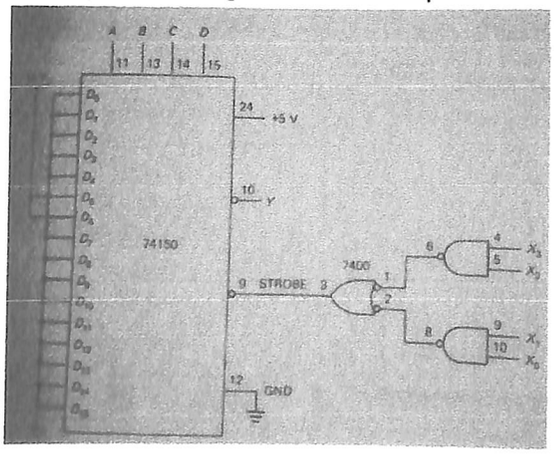
I. Answer any Ten questions. Each question carries 1 marks **(10x1=10)**

1. Draw the diode equivalent circuit of AND gate and its truth table.
2. Write OR, AND and double inversion rules of Boolean algebra.
3. Define Max terms and Minterms.
4. Enlist the advantages of parallel adder circuit.
5. What do you mean by BCD? Write the BCD of 628 and 429.
6. Compare asynchronous and synchronous sequential circuits.
7. Find the o/p voltage from a 5 bit ladder that has a digital input of 10011 (assume 0 =0V & 1= 10V).
8. Write a C++ programme that displays the text "Greetings".
9. Give a note on whitespace in C++.
10. What is a variable in C++ language?
11. Cite the primary features of an object oriented programming language.
12. Specify the identifier that receives the input data from the user in a C++ programme.

Part B

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

13. A digital circuit has high outputs for the following input conditions, 1001, 0101, 1011 and 1111. Deduce its sum of product equation and corresponding logic circuit. Express the SOP equation in canonical form and convert it to POS form also.
14. With the aid of a logic circuit explain how 4 bits can add in simultaneously. Give its truth table also.
15. Identify the circuit given. For what i/p the STROBE is LOW?



16. Explain the working of a positive edge triggered JK flip flops.
17. Elaborate how a 4 bit binary ripple counter works. Give ts output wave forms.

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 4 lines of 0123 using nested loops.
20. Write a programme that displays the squares of the numbers from 0 to 14.
21. Write a programme that prompts the user to enter two numbers; a dividend and a divisor. Then the programme should calculate the quotient.

Part C

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

22. Discuss the various methods of simplification of karnaugh map.
23. Mention the types of Converters and discuss how a resistive ladder network converts digital signal to corresponding analog signal.
24. Discuss the array fundamentals in C++.
25. Describe the functions in a C++ programme Discuss their uses, declaration and function definition.