SAINIK SCHOOL CHANDRAPUR
HOLIDAY HOMEWORK
Session 2024-25

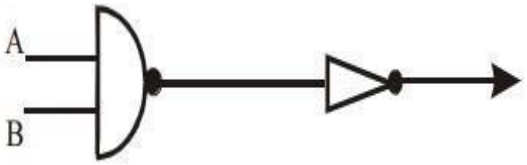
CLASS: - XI B

SUBJECT: - COMPUTER SCIENCE

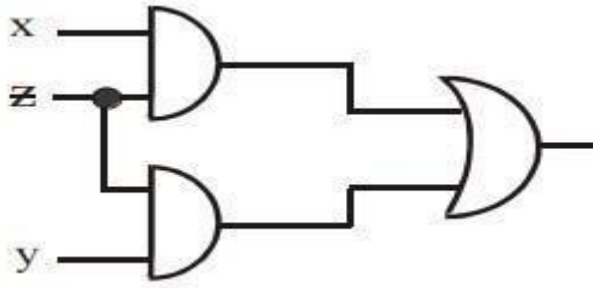
COMPUTER SYSTEM & ORGANIZATION

1. What is the basic building block of any computer?
2. Explain the basic architecture of a computer?
3. What is the role of CPU in a computer?
4. What is the function of memory in computer?
5. What is the role of input unit in a computer?
6. What is the role of output unit in a computer?
7. Give some examples of input devices of computer?
8. Give some examples of output devices of computer?
9. What are the functions of input and output unit of a computer?
10. What are the functions performed by control unit in computer?
11. What are the functions performed by ALU?
12. Can you distinguish CPU and ALU?
13. Distinguish internal and external memory of a computer?
14. Differentiate RAM and ROM.
15. Write short notes on different types of ROMs.
16. Write any four memory units
17. What are the basic components of any typical mobile system?
18. What are the various categories of software?
19. What is application software?
20. What is system software?
21. What is operating system and how it is important for any computer?
22. What is software library and how it is useful?
23. Write names of some software libraries of Python.
24. Draw the basic building block of any typical mobile system
25. Do you feel mobile phones are replacing computers, if yes then why?
26. Differentiate compiler and interpreter
27. What is Boolean algebra?
28. What are the basic logic elements/gates?
29. What is truth table?
30. What are the universal logic gates?
31. Define Logic Gates.
32. Define following gates and draw logic circuit diagram
    (a) OR Gate (b) AND Gate
    (c) NOT Gate (d) NAND Gate
    (e) NOR Gate
33. Prove by Boolean Algebra rules X (X + Y) = X
34. Prove by Boolean Algebra Rules X +X' Y = X + Y
35. Prove that by Boolean Algebra Rule for AB +AC + ABC= AB+AC

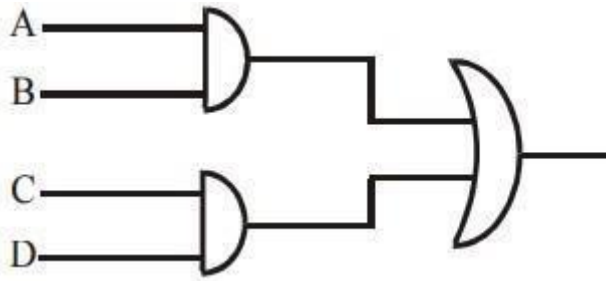
36. Construct a logic diagram for expression A. B + C
37. Construct a logic diagram for expression A. B + B.C
38. Construct a logic diagram for expression B. (A +C)
39. Find truth table of X + Y = Y + X
40. Prepare a truth table of XY= YX
41. Prepare a truth table X (X +Y) = X
42. Prepare a truth table of X + X Z' = X
43. Obtain logic expression for logic diagram



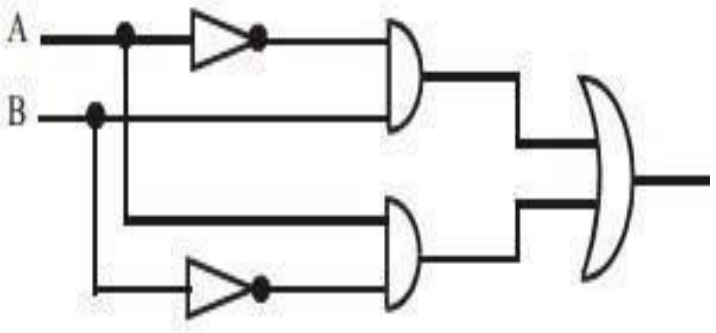
44. Obtain logic expression for logic diagram



45. Obtain logic expression for logic diagram



46. Obtain logic expression for logic diagram



INFORMATION REPRESENTATION

1. Convert 1111 0110 from base 2 to base 10
2. Convert 0111 1111 from binary to decimal
3. Convert 27 from base 10 to base 2
4. Convert 62cd from hexadecimal to base 2
5. Convert 0111 1000 1111 1100 from binary to base 16
6. Convert 0111 1110 1010 0111 from base 2 to hexadecimal
7. Convert 223 from base 10 to binary

8. Convert 10 from octal to binary
9. Convert d214 from base 16 to binary
10. Convert 0111 1110 1000 1111 from binary to hexadecimal
11. Convert 77 from base 8 to base 10
12. Convert 11101010 from base 2 to base 16
13. Convert ad from base 16 to base 10
14. Convert 41 from base 16 to base 2
15. Convert ff from base 16 to base 2
16. Convert 27 from base 8 to base 10
17. convert (110011)2 to decimal.
18. convert (1011.101)2 into decimal.
19. convert (51)10 into binary
20. Example: convert (F4C)16 into decimal.
21. Convert 011012 to octal
22. Convert 0011001102 to octal
23. Convert 10112 to octal
24. Convert 111100012 to octal
25. What is ASCII CODE and where its used and why?
26. What is unicode ?
27. How many bits are used to represent Unicode, ASCII, UTF-32, and UTF-8 characters?
28. What scripts does Unicode support?
29. Why is there more than one Unicode encoding?

PROGRAM EXECUTION

1. What is program execution?
2. What is the basic flow of execution of a program?
3. Differentiate linker and loader part of the compiler
4. How do you think that operating system works as a resource manager?
5. Differentiate compiler and interpreter
6. What are the steps of program compilation of a compiler
7. What are the phases of compilation move of a program execution?
8. What are the major operating system functions?
9. What are the major activities of an operating system in respect of program management?
10. Describe the process state diagram?

GETTING STARTED WITH PYTHON

1. Who is the developer of Python Programming Language?
2. How Python was named for Python Programming language?
3. Is python cross platform language, how?
4. What are the advantages of Python Programming Language?

PYTHON FUNDAMENTALS

1. What are literals in Python? How many types of literals are there in Python?
2. How string literal is represented in Python?
3. What is a statement and expression?
4. What is the role of indention in Python?
5. What are variables?

6. What is dynamic typing in python?
7. Differentiate keyword and identifier.
8. What are tokens in Python?
9. What will be the output of following python code? a,b=3,4 c,a=b*4,a+4 print(a,b,c)
10. Write a Python program to find out the simple interest.

CONDITIONAL AND LOOPING CONSTRUCTS

1. What is the use of range() function in python?
2. else clause is available with if as well as loop construct, can you differentiate the use of else inboth.
3. What is empty statement?
4. What is determinable and non-determinable loop in python?
5. What are jump statements in python?
6. What is entry control loop?
7. What is named condition?
8. What is the output of the following program? x = ['dc', 'ba'] for i in x:
   i. upper() print(x)
9. What is the output of the following program?

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x = 321 for i in x:
  print(i)
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10. What is the output of the following program? for i in [4, 3, 2, 1][::-1]:
  print (i)