

(SECTION A)-1 mark questions

1. What do you understand by 'truth value'? How are these related?
2. What do you understand by 'logical function'?
3. What is meant by tautology and fallacy?
4. What is a truth table? What is its significance ?
5. What are the basic postulates of boolean algebra ?
6. What does duality principle state?
7. State the distributive laws of boolean algebra. How do they differ from the distributive laws of ordinary algebra ?
8. Prove the complementarity law of boolean algebra with the help of a truth table.
9. Give the truth table proof for distributive law of boolean algebra.
10. Give algebraic proof of the absorption law of boolean algebra.
11. What is Radix?
12. Convert the following decimal number to octal.
0.675
13. What is the Principle of duality with example?
14. What do you mean by binary decision?
15. What is tautology?
16. Write different types of software.
17. What is ALU?
18. What is the input unit?
19. What is the output unit?
20. What is secondary memory?
21. List two types of secondary memory.
22. What are bits?
23. What is an algorithm?
24. What is flowchart?
25. What is decomposition?
26. What is dry run
27. What is pseudocode?
28. What is an assignment?
29. What are conditional statements?
30. What are hardware and software?
31. What are DeMorgan's theorems ?
32. When was Python released?
33. What are variables?

34. Prove that $1 + Y$ is a tautology and $0 \cdot Y$ is a fallacy.
35. Give examples for logical functions.
36. What is its usage in boolean algebra ?
37. In how many different ways, can you work in Python?
38. The tracing of value done by a programmer manually is called _____
39. Truth values are _____ and _____.
40. The _____ function gets the input from the user.
41. A logical expression, which is always TRUE for all inputs, is termed as _____.
42. The AND gate takes _____ input.
43. Antivirus software is a type of _____.
44. A _____ is a reserved word carrying special meaning and purpose.
45. Utility programs are types of _____.
46. According to distributive law: $X(Y+Z) =$ _____.
47. ALU along with CU of a computer, combined into single unit, is known as _____
 i. CPU ii. input device iii. memory unit iv. Operating unit
48. Disk fragmentor is an example of _____
 i. application software ii. system software iii. utility software iv. none of these
49. Flash memory is an example of _____
 i. hardware ii. software iii. cpu iv. memory
50. What will be third step for problem solving _____
 i. analyse ii. find solution iii. coding iv. testing

(SECTION B)-2 mark questions

1. Convert the following octal to decimal number :
 a. 3527
 b. 3672
2. What do you mean by logic gates? Write down different types of logical gates:
3. Convert the following decimal to octal number :
 a. 365
 b. 537
4. How keywords are different from identifiers.
5. Convert the following decimal number to hexadecimal number :
 a. 1002
 b. 4052
6. Write down python code for swapping three numbers.
7. State commutative laws of boolean algebra and prove commutative laws using truth table
8. Write down different binary addition cases with proper explanation. And add the binary number (11100) and (11010)
9. Convert the following decimal to octal number :
 a. 161

- b. 464
10. Convert the following binary number to decimal number :
(a) 11011100
(b) 1010.10
11. Convert the following decimal number to hexadecimal number :
(a) 1002
(b) 4052
12. Write down the python-pluses and its disadvantages.
13. State distributive laws of boolean algebra and prove distributive laws using truth table.
14. Convert the following binary numbers to octal : (a) 110110101 (b) 1101100001
15. Convert the following binary numbers to octal :
(a) 11001
(b) 10101100
16. Convert the following octal numbers to binary:
(a) 123
(b) 257
17. Convert the following binary numbers to decimal:
(a) 1101
(b) 111010
18. Convert the following binary numbers to decimal
(a) 23
(b) 100
19. Convert the following decimal numbers to binary:
(a) 145 (b) 0.25
20. Convert the following binary numbers to hexadecimal :
(a) 10110111011011
(b) 0110101100 10.
21. Which argument of print() would you set for :
(i) changing the default separator (space)? (ii) printing the following line in the current line?
22. What is an expression and a statement?
23. What is the role of indentation in Python?
24. What do you understand about undefined variables in Python?
25. What are the advantages of the Python programming language?
26. What is cross-platform software?
27. What are the advantages/disadvantages of working in Interactive mode in Python?
28. What are the advantages/disadvantages of working in script mode in Python?
29. Which of these is not a legal numeric type in Python? (a) int (b) float (c) decimal.
30. How are string-literals represented and implemented in Python?

31. How are floating constants represented in Python? Give examples to support your answer.
32. What is done during the coding phase?
33. What is testing and debugging?
34. Distinguish between a condition and a statement.
35. Draw a flowchart for conditional statements.
36. Both conditional statement and iterative statement have a condition and a statement. How do they differ?
- 37.. Name some tools used for problem solution development.
38. What is the difference between an algorithm and a program?
39. What are the phases of the program solving cycle?
40. What do you do while analyzing a problem?

(SECTION C)-3 mark questions

1. What are various categories of software? Explain all of them.
2. Prepare a table and circuit diagram of combinations for the following Boolean logic expression a

$$A B \bar{C} + A C + A B$$
3. Define decomposition. Write down the step in the problem solving cycle. Which box is drawn to write $(a > b)$ in flowchart.
4. What do you mean by indent? Write down rules for writing identifiers.
5. Write down output for following:

$$x, y = 2, 6$$

$$x, y = y, x + 2$$
6. What are various categories of software? Explain all of them.
7. Prepare a table of combinations for the following Boolean logic expression a

$$A B \bar{C} + A C + A B$$
8. Define decomposition. Write down the step in the problem solving cycle. Which box is drawn to write $(a > b)$ in flowchart.
9. Write an algorithm to find the square of a number.
10. Draw a flowchart to solve the problem of a non-functioning light bulb.
11. . Draw a flowchart for calculating grade from marks percentage.
12. . Write an algorithm to double a number in two different ways: (i) $n + n$, (ii) $2 \times n$.
13. . Write an algorithm and draw a flowchart to determine if a student passed the exam or not. (Note there are 4 subject papers and the passing average is 50 or more.)

14. What would the following code do : $X = Y = 7$?
15. What is the error in the following code: $X, Y = 7$?
16. Following variable definition is creating problem $X = 0281$, find reasons.
17. "Comments are a useful and easy way to enhance readability and understandability of a program."
Elaborate with examples.
18. How are keywords different from identifiers ?
19. What are literals in Python? How many types of literals are allowed in Python?
20. Who was Python's developer and which two languages contributed to Python as a programming language?
21. What are some limitations of the Python programming language?
22. Draw the logic circuit for this boolean equation : $y = ABCD ABCD + ABCD + ABCD$
23. Draw the AND-OR circuit for: $y = AB C D + ABC D + ABCD$
24. Find the dual of Boolean expression $AD + CD + AB$.
25. Find the dual of Boolean expressions : $XYZ + XYZ$.
26. Design a logic circuit to realize the Boolean function $f(x, y) = x.y + x'. Y'$
27. Find the complement of Boolean expression $B + AC + BA$.
28. Find the complement of Boolean expression : $XYZ + XYZ$.
29. Find the dual of Boolean expressions $(A+B+C)(A+BC)$.
30. Find the dual of Boolean expression $B + AC + BA$.

(SECTION D)-4 mark questions

1. Draw the logic circuit diagram for expressions: (a) $(A' + BC)(B' + C'A)$ (b) $AB' + B'C' + ABC$
2. To calculate the area and the circumference of a circle.
3. To calculate the simple interest.
4. To print n odd numbers.
5. To print the square of a number.
6. To accept 5 numbers and find their average.
7. To check if a number is a positive or negative number.
8. To check whether a year is a leap year or not.
9. What are the basic postulates of boolean algebra ?
10. What does duality principle state? What is its usage in boolean algebra ?
11. State the distributive laws of boolean algebra. How do they differ from the distributive laws of ordinary algebra ?
12. Prove the complementarity law of boolean algebra with the help of a truth table.
13. Give the truth table proof for distributive law of boolean algebra.
14. Write and draw the components of a computer system. Write output of following code or you will get an error from code explain that error.

`#print("such as")`

```
print ('take every chance.')
```

```
print("drop every fear.")
```

15. Write and explain Generation of computers. Write output of following code or you will get an error from code explain that error.
16. What is python? What is the difference between interactive mode and script mode? How to install packages in python and write down code for inserting data (name,class,address,guardian name).
17. Write and draw the components of a computer system.
18. Write a program to read number n and print n^2, n^3, n^4 .
19. When was python released? Write python program
 - a. To find the average of a number.
 - b. To input number and print 4 times of its input.
20. Write down algorithm and flowchart for:
 - a. Factorial of number (n).
 - b. Odd numbers starting for 17 to 21.