



REVISION SHEET

SUBJECT: COMPUTER SCIENCE

CLASS-XI

TERM 1

SECTION – 1 MARK QUESTIONS (20 x 1 = 20 Marks)

- Which of the following best describes the role of Registers in a CPU?
a) Permanent storage of the operating system b) Temporary high-speed storage used during instruction execution c) Long-term backup storage d) Storage for peripheral device drivers
- Which of these correctly orders memory types from FASTEST to SLOWEST access speed?
a) RAM > Cache > Secondary Memory b) Cache > RAM > Secondary Memory c) Secondary Memory > RAM > Cache d) RAM > Secondary Memory > Cache
- An Assembler is used to translate:
a) High-level language to machine language b) Assembly language to machine language c) Machine language to assembly language d) High-level language to assembly language
- Which of the following is TRUE about Utility Software?
a) It is used to develop other software b) It performs maintenance-type tasks for the system, such as disk cleanup c) It replaces the need for an operating system d) It cannot run without an interpreter
- What is the hexadecimal equivalent of the decimal number 1000?
a) 3E8 b) 3D8 c) 4E8 d) 3E9
- What is the octal equivalent of the binary number 111010101?
a) 725 b) 725.5 c) 625 d) 735
- In a 3-input AND gate, for how many input combinations will the output be 1?
a) 0 b) 1 c) 3 d) 7
- Which of the following is NOT a valid Boolean operator symbol used to represent AND, OR, and NOT respectively?
a) . , + , ' b) & , | , ~ c) AND , OR , NOT (as written keywords in Boolean algebra) d) x , ÷ , %
- What is the output?
`print(10 != 10.0)`
a) True b) False c) Error d) None
- Which of the following is an invalid variable name in Python, and why?
a) `total_1` — invalid, cannot end with a digit b) `1_total` — invalid, cannot start with a digit c) `Total` — invalid, cannot start with uppercase d) `_total` — invalid, cannot start with underscore
- What is the output?
`print(5 == 5.0 and "5" == 5)`

a) True b) False c) Error d) None

12. Which of the following statements is used to terminate a loop before its normal completion?

a) continue b) break c) exit d) return

13. Which keyword skips the current iteration of a loop and moves to the next?

a) break b) continue c) pass d) skip

14. What is the output?

```
for i in range(5, 0, -1):
```

```
    if i == 3:
```

```
        break
```

```
    print(i, end=' ')
```

a) 5 4 b) 5 4 3 c) 4 3 2 1 d) 5 4 3 2 1

15. What is the output?

```
count = 0
```

```
for i in range(1, 6):
```

```
    if i % 2 == 0:
```

```
        continue
```

```
    count += 1
```

```
print(count)
```

a) 2 b) 3 c) 5 d) 4

16. Which of the following string slicing expressions will raise an error for S = "Python"?

a) S[10] b) S[10:20] c) S[-100:] d) None of these will raise an error

17. What is the output?

```
S = "assessment"
```

```
print(S.count("s"))
```

a) 2 b) 3 c) 4 d) 5

18. What is the output?

```
S = "12345"
```

```
print(S.isdigit(), S.isalpha())
```

a) True False b) False True c) True True d) False False

19. Assertion (A): The expression `"10" + 10` will raise a `TypeError` in Python.

Reason (R): Python does not implicitly convert a string to an integer during the `+` operation between a string and an integer.

a) Both A and R are true and R is the correct explanation of A.

b) Both A and R are true but R is not the correct explanation of A.

c) A is true but R is false.

d) A is false but R is true.

20. Assertion (A): The loop `for i in range(5, 5): print(i)` will execute exactly zero times.

Reason (R): When the start and stop values of `range()` are equal, the range object generated is empty.

a) Both A and R are true and R is the correct explanation of A.

b) Both A and R are true but R is not the correct explanation of A.

c) A is true but R is false.

d) A is false but R is true.

SECTION – 2 MARK QUESTIONS (20 x 2 = 40 Marks)

21. Differentiate between Cache Memory and RAM with respect to speed, cost, and position in the memory hierarchy.
22. Explain the fetch-decode-execute cycle briefly, naming the CPU components involved at each stage.
23. Convert the decimal number 315 into its binary and hexadecimal equivalents.
24. Convert the hexadecimal number $(2F)_{16}$ directly into its octal equivalent (show the intermediate binary grouping).
25. Draw the truth table for a 2-input NOR gate, and state one real-life application area of logic gates.
26. Differentiate between a Compiler and an Assembler, with respect to the type of source language each processes.
27. Write the output:
a = 23
b = 5
print(a // b, a % b, -a // b)
28. What is Dynamic Typing in Python? Show with an example how the type of the same variable can change during execution.
29. Write Python code to accept the length of three sides of a triangle from the user and determine (using a single if-elif-else) whether it is Equilateral, Isosceles, or Scalene.
30. Write the output:
x = 7
y = 2
print(x / y, x // y, x % y, x ** y)
31. What is the significance of the third argument (step) in the range() function? Illustrate with range(20, 5, -5).
32. Write the output:
total = 0
for i in range(2, 30, 4):
 total += i
print(total, i)
33. Write the output:
n = 0
for i in range(1, 8):
 if i == 5:
 break
 n += i
else:
 n = -1
print(n)

34. What is the difference between the break and continue statements? Give a one-line example scenario for each where one would be preferred over the other.

35. Write the output:

```
S = "Computer Science"
print(S[2:15:3])
print(S[-1::-2])
```

36. Explain why strings are immutable in Python. What error occurs if you try `S[0] = 'X'` on a string `S`?

37. Write Python code to check whether a string entered by the user contains only alphabets, using an appropriate string method (without loops).

38. Differentiate between the `find()` and `index()` methods, specifically with respect to what happens when the substring is not present in the string.

39. Write the output:

```
S = " Data Handling "
print(len(S))
print(len(S.strip()))
print(S.split())
```

40. What is the use of the `join()` method in Python? Write a statement to join the list `['2026','07','29']` into a string `"2026-07-29"`.

SECTION – 3 MARK QUESTIONS (20 x 3 = 60 Marks)

41. Explain the difference between System Software, Utility Software, and Application Software, giving one example of each along with the primary user of each type.

42. What is the purpose of an Operating System? Name any four functions performed by it.

43. Convert the decimal number 987 into binary, octal, and hexadecimal equivalents (show all three conversions).

44. Draw the truth table for the Boolean expression $F = A.B + A'.C$ (do not simplify, just evaluate for all input combinations).

45. Explain the concept of Booting in a computer system. Differentiate between Cold Booting and Warm Booting.

46. Write the output, and explain the order of evaluation:

```
a, b, c, d = 5, 2, 3, 1
print(a + b * c ** d - (a - b) / c)
```

47. Explain the difference between `int()`, `float()`, and `eval()` functions in Python, with one example of each on a string input.

48. Write a program to accept the coefficients `a`, `b`, `c` of a quadratic equation and determine (without solving) whether the discriminant ($b^2 - 4ac$) is positive, zero, or negative, printing an appropriate message.

49. Explain any three categories of Tokens in Python (Keywords, Identifiers, Operators/others) with two examples of each.

50. Write the output:

```
n = 45
if n % 15 == 0:
    print("FizzBuzz")
elif n % 3 == 0:
    print("Fizz")
elif n % 5 == 0:
    print("Buzz")
else:
    print(n)
```

51. Write a program that accepts numbers from the user one at a time in a loop, and stops accepting input as soon as the user enters a negative number (use break). Display the sum of all positive numbers entered before the negative number was encountered.

52. Write a program to print all numbers from 1 to 30, skipping the multiples of 4 using continue, and displaying the count of numbers actually printed.

53. Write a program to display the sum of the squares of all odd numbers between 1 and 20 (both included) using a for loop.

54. Write a program using a while loop that repeatedly asks the user to enter a number, and stops as soon as the user enters 0, displaying the running total each time a non-zero number is entered.

55. Write a program to accept a number from the user and, using a loop and break, determine and display whether it is Prime or not.

56. Write the output:

```
S = "Examination2026"
print(S[::-2])
print(S[1:-1:3])
print(S.swapcase())
```

57. Write a program to accept a string from the user and display it with all vowels removed (using a loop, without using replace()).

58. Explain the difference between the strip(), lstrip(), and rstrip() methods, and write an example showing the output of each on the string " ##Hello## ".strip("#") — explain why spaces remain.

59. Write a program to check whether a given string is a palindrome, ignoring case and spaces (e.g., "Nurses Run" should be identified as a palindrome).

60. Write the output:

```
S = "one two three four"
words = S.split()
print(words[1:3])
print("-".join(words))
```

SECTION – 4 MARK QUESTIONS (10 x 4 = 40 Marks)

61. Define the following, and give one real-world example of a device/technology using each:

- a) ROM b) Cache Memory c) Firmware d) Secondary Storage

62. a) Convert $(3B7)_{16}$ to its decimal equivalent. (2)

b) Convert $(245)_{10}$ to its octal equivalent. (2)

63. What will the following code print? Justify each output line with reasoning.

```
x = [1, 2, 3]
```

```
y = x
```

```
z = x.copy()
```

```
y.append(4)
```

```
z.append(5)
```

```
print(x)
```

```
print(y)
```

```
print(z)
```

(Note: This tests reference vs copy semantics — a concept relevant even before Lists chapter, as a preview of mutable object behaviour; alternatively substitute with a pure numeric variable-aliasing question if Lists is not yet covered — see note below.)

ALTERNATE (if Lists not yet introduced):

```
a = 10
```

```
b = a
```

```
a = a + 5
```

```
print(a, b)
```

a) What is the output?

b) Does changing 'a' affect 'b'? Justify with reference to how simple variables store values in Python.

64. Read the code and answer the questions:

```
total = 0
```

```
for i in range(1, 50):
```

```
    if i % 7 == 0:
```

```
        total += i
```

```
    if total > 100:
```

```
        break
```

```
print(total, i)
```

a) Trace through the execution and state the value of 'i' when the loop breaks.

b) What is the final output?

c) Which two concepts (looping and control) are demonstrated together here?

65. Consider the string `S = "Programming@2026#IsFun"`. Write the output of the following:

a) `S[-7:-1]`

b) `S[2:14:4]`

c) `S[::-3]`

d) `sum(1 for ch in S if ch.isdigit())` [conceptual — explain what this counts, if generator expressions not covered, rewrite as: how many digit characters are present in S?]

66. Write a program that accepts a sentence from the user and counts the number of words having more than 4 letters, without using the `split()` method's result length shortcut (i.e., manually traverse and count).

67. Explain the following operators with one example each, and state their result type (True/False or

numeric):

- a) Membership operator (in) b) Identity operator (is) c) Floor division (//) d) Modulus (%)

68. Write a program to accept marks of a student in 5 subjects using a loop (accept one at a time), and display the total, average, and grade (based on average: ≥ 90 'A', ≥ 75 'B', ≥ 60 'C', else 'D'), using break if any subject mark entered is negative (invalid entry) to stop further input.

69. Explain any four differences between a Compiler and an Interpreter, including their handling of errors during translation.

70. Write a program to accept a string and display the count of uppercase letters, lowercase letters, and digits present in it, using a single for loop with if-elif-else (no built-in filtering functions).

SECTION – 5 MARK QUESTIONS (10 x 5 = 50 Marks)

71. a) Explain the Von Neumann architecture of a computer system, mentioning its key components and the stored-program concept. (3)

b) Differentiate between Volatile and Non-Volatile memory with one example each, and state which category Cache Memory falls under. (2)

72. a) Convert $(11010110)_2$ to its decimal, octal, and hexadecimal equivalents. (3)

b) Draw the truth table for the Boolean expression $F = (A+B).(A+C)$ (do not simplify). (2)

73. a) Explain the concept of Operator Precedence in Python with a worked example expression involving arithmetic, comparison, and logical operators together. (3)

b) What is Type Casting? Differentiate between implicit and explicit type casting with one example of each. (2)

74. Write a program using a single for loop and the break statement to find and display the first number greater than 100 that is exactly divisible by both 7 and 9. (3 marks for logic, 2 marks for correct tracing/output)

75. a) Write a program using a while loop to find the sum of the digits of a number entered by the user. (3)

b) Modify the logic to also count how many digits were processed, using the same loop. (2)

76. Write a program that accepts numbers from the user one at a time in a loop until the user enters 0 (use break to stop input). Using continue, skip and do not count any negative numbers entered. At the end, display the count and sum of all valid (positive) numbers entered.

77. a) Write a program to check whether a number entered by the user is Prime, using break to exit the loop as soon as a factor is found. (3)

b) Explain how using break makes this program more efficient than checking all possible divisors up to the number itself. (2)

78. Write a program that accepts a paragraph (a multi-line string, terminated when the user enters "END") from the user, accepting one line at a time in a loop with break used to stop input, and then displays:

a) The total number of vowels across all lines combined. (2)

b) The most frequently occurring alphabet. (2)

c) The total character count (excluding spaces). (1)

79. a) Explain the concept of String Traversal using a loop, with an example that prints each character of a

string along with its ASCII value using `ord()`. (3)

b) Differentiate between string concatenation and string repetition, showing the output of `"ab" + "cd"` versus `"ab" * 3`. (2)

80. Write a program to accept a string from the user and, using a single loop with `continue`, build and display a new string containing only the alphabetic characters (skip digits and special characters using `continue`). Also display the count of characters skipped.