



REVISION SHEET

SUBJECT: INFORMATICS PRACTICES

CLASS-XI

TERM 1

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

1. Which of the following best describes the role of the Control Unit (CU) in a CPU?
a) Performs arithmetic operations b) Directs and coordinates the operations of the computer c) Stores data permanently d) Connects the computer to a network
2. Which memory is fastest?
a) RAM b) Cache c) Hard Disk d) Pen Drive
3. A disk cleanup tool is an example of:
a) Application Software b) System Software c) Utility Software d) Hardware
4. Python is best described as:
a) A compiled, closed-source language b) An interpreted, free and open-source language c) An assembly-level language d) A markup language
5. Which of the following is a valid Python variable name?
a) 2total b) total_2 c) total-2 d) total 2
6. What is the output?
`print(10 == 10.0)`
a) True b) False c) Error d) None
7. What is the output?
`print("5" == 5)`
a) True b) False c) Error d) None
8. Which of the following is the correct syntax for a for loop that runs from 1 to 10 (inclusive)?
a) for i in range(1,10): b) for i in range(1,11): c) for i in range(0,10): d) for i to range(10):
9. What is the output?
`count = 0`
`for i in range(1, 6):`
`if i % 2 == 0:`
`count = count + 1`
`print(count)`
a) 2 b) 3 c) 5 d) 4
10. Which loop is best suited when the number of iterations is NOT known in advance?
a) for b) while c) do-while d) range loop

11. What is the output?

```
x = 10
```

```
while x > 5:
```

```
    x = x - 1
```

```
print(x)
```

a) 6 b) 5 c) 4 d) 10

12. To find the second element of the list 'colors', _____ will be used.

a) colors[2] b) colors[1] c) colors(1) d) colors{1}

13. Which method adds a single element to the end of a list?

a) insert() b) append() c) extend() d) add()

14. What is the output?

```
L = [5, 10, 15]
```

```
print(L[-1])
```

a) 5 b) 10 c) 15 d) Error

15. Lists in Python are:

a) Mutable b) Immutable c) Both d) Depends

16. Which method returns all the values stored in a dictionary?

a) keys() b) values() c) items() d) getvalues()

17. What is the output?

```
D = {"x": 1, "y": 2}
```

```
print(len(D))
```

a) 1 b) 2 c) 4 d) Error

18. Which symbol is used to enclose a dictionary in Python?

a) [] b) () c) {} d) <>

19. Assertion (A): Lists in Python are mutable.

Reason (R): Elements of a list can be changed after the list has been created.

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): A dictionary key must be unique.

Reason (R): If a key is repeated while creating a dictionary, the last value assigned to that key overwrites the earlier one.

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 and position in the memory hierarchy.

22. Give one example each of System Software and Application Software, along with their purpose.
23. What is the difference between Primary Memory and Secondary Memory, with respect to volatility?
24. Write the output:
- ```
a = 23
b = 5
print(a // b, a % b)
```
25. What is Dynamic Typing in Python? Explain with a short example.
26. Write the output:
- ```
x = 7
y = 2
print(x / y)
print(x // y)
```
27. What is the significance of the third argument (step) in the range() function? Illustrate with one example.
28. Write the output:
- ```
total = 0
for i in range(2, 10, 2):
 total = total + i
print(total)
```
29. Write the output:
- ```
n = 0
x = 15
while x >= 12:
    n = n + 1
    x = x - 1
print(n, x)
```
30. Explain the difference between a for loop and a while loop, with one situation where each would be preferred.
31. Write the output:
- ```
L = [12, 25, 8, 19]
print(L[1:3])
print(L[-2:])
```
32. What is the difference between the append() and insert() methods of a list, with an example of each?
33. Write the output:
- ```
L = [10, 20, 30, 40, 50]
print(L[1:4])
print(L[:2])
```
34. Explain how you would find the length of a list and the sum of all its elements, using appropriate built-in functions.
35. Write the output:

```
D = {"Name": "Aarav", "Age": 16}
D["Age"] = 17
print(D)
```

36. What is the difference between the del statement and the pop() method when used to remove an item from a dictionary?

37. Write the output:

```
D = {"a": 10, "b": 20, "c": 30}
print(sum(D.values()))
```

38. Explain how a dictionary in Python is different from a list, with respect to how elements are accessed.

39. Write the output:

```
L = [1, 2, 3, 4, 5]
print(L[:2])
print(L[:-1])
```

40. What is the purpose of the update() method of a dictionary? Give a short example.

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.

42. What is the purpose of an Operating System? Name any three functions it performs.

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

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

```
a, b, c = 5, 2, 3
print(a + b * c)
print((a + b) * c)
```

45. Explain the difference between int(), float(), and str() functions in Python, with one example of each.

46. Write the output:

```
n = 22
if n % 2 == 0:
    print("Even")
else:
    print("Odd")
print(n // 5)
```

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

48. 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)
```

49. Write the output:

```
total = 0
for i in range(1, 6):
    total = total + i * i
print(total)
```

50. Explain, with an example, how a while loop can be used to calculate the factorial of a number.

51. Write the output:

```
L = [10, 25, 30, 45, 60, 75]
print(L[2:5])
print(L[-3:])
print(L[1:5:2])
```

52. What is the difference between the remove() and pop() methods of a list, with respect to what argument each takes?

53. Write the output:

```
L = [3, 6, 9, 12, 15]
total = 0
for x in L:
    if x % 3 == 0 and x % 2 == 0:
        total = total + x
print(total)
```

54. Explain the concept of List Traversal using a for loop, with a short example that prints each element of a list.

55. Write the output:

```
L = ["Red", "Green", "Blue", "Yellow"]
print(L[0:3])
print(len(L))
L.append("Pink")
print(L)
```

56. Differentiate between the sort() method and the sorted() function, with respect to whether they modify the original list.

57. Write the output:

```
D = {"Name": "Riya", "Marks": 88, "Grade": "A"}
print(D.keys())
print(D.values())
```

58. Explain the update() method of a dictionary with an example showing how it merges another dictionary into the original.

59. Write the output:

```
D1 = {"a": 1, "b": 2}
D2 = {"b": 3, "c": 4}
D1.update(D2)
print(D1)
```

60. What is the difference between a list and a dictionary, with respect to how their elements are indexed/accessed?

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) RAM d) Secondary Storage

62. a) What is the difference between Interactive Mode and Script Mode in Python? (2)

b) List two advantages of using Script Mode over Interactive Mode. (2)

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

```
a = 10
b = a
a = a + 5
print(a, b)
```

a) What is the output?

b) Does changing 'a' affect 'b'? Justify your answer.

64. Read the code and answer the questions:

```
total = 0
for i in range(1, 20):
    if i % 4 == 0:
        total = total + i
print(total, i)
```

a) List the values of i for which the if condition is True.

b) What is the final output?

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

65. Consider the list L = [10, 25, 30, 45, 60, 75]. Write the output of the following:

a) L[2:5]
b) L[-3:]
c) L[:2]
d) L[1:5:2]

66. Consider the dictionary Marks = {"Amit": 78, "Riya": 92, "Kabir": 65}. Write the statement/output for:

a) Display the value for key "Riya".
b) Add a new key "Tina" with value 88.
c) Check if "Sonal" exists as a key (write the expression and its result).
d) Display all key-value pairs using items().

67. Explain the following operators with one example each, and state their result type:

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

68. Explain, with a short example, how a for loop can be used to calculate the total and average of marks in 5 subjects.

69. Explain any four differences between a List and a Dictionary in Python, with respect to how they store and access data.

70. Write the output:

```
L = [5, -3, 0, 8, -1, 12, 0]
pos = 0
neg = 0
zero = 0
for x in L:
    if x > 0:
        pos = pos + 1
    elif x < 0:
        neg = neg + 1
    else:
        zero = zero + 1
print(pos, neg, zero)
```

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

71. a) Explain the basic functional components of a computer system: Input Unit, CPU, Output Unit, and Memory Unit. (3)

b) Differentiate between Volatile and Non-Volatile memory with one example each. (2)

72. a) What is Operator Precedence in Python? Explain with a simple example involving +, -, and *. (3)

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

73. Write the output of the following code, explaining each line:

```
total = 0
for i in range(1, 10):
    if i % 3 == 0:
        total = total + i
print("Sum of multiples of 3:", total)
print("Last value of i:", i)
```

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

b) What will be the output of your program if the user enters 253? Show the step-by-step working. (2)

75. Consider the list L = [45, 12, 78, 33, 90, 21, 60]. Write statements/output for the following:

a) Display the list in reverse order using slicing. (1)

b) Display every alternate element starting from index 1. (1)

c) Display the first three and last three elements together. (1)

d) Display the length of the list and the sum of its elements. (2)

76. a) Explain, with an example, how a for loop and an if statement can together be used to check whether a number is Prime. (3)

b) List the steps (in words, no code needed) you would follow to check if 17 is prime. (2)

77. Consider a list of 8 numbers: L = [34, 12, 89, 45, 67, 23, 90, 15]. Write statements/output for:

- a) Display the sum and average of the list. (2)
- b) Display all numbers greater than the average. (2)
- c) Display the count of numbers that are multiples of 5. (1)

78. Consider the dictionary Employees = {"E101": 45000, "E102": 62000, "E103": 38000, "E104": 71000}. Write statements/output for:

- a) Display the EmpID with the highest salary (in words: explain the approach, or write the statement using max() on values). (2)
- b) Display the total salary expenditure using sum(). (2)
- c) Display the number of employees having salary above 50000. (1)

79. a) Explain the concept of List Traversal using a loop, with an example that prints each element of a list along with its index (using range(len(L))). (3)

b) Differentiate between list concatenation and list repetition, showing the output of [1,2] + [3,4] versus [1,2] * 3. (2)

80. Consider the dictionary Products = {"Pen": 20, "Notebook": 60, "Bag": 850, "Bottle": 300, "Watch": 1200}. Write statements/output for:

- a) Display all product names using keys(). (1)
- b) Display the total value of all products using sum(values()). (2)
- c) Display the number of products priced above Rs 500. (2)