

**JB Academy, Ayodhya**  
**Annual Examination 2023**  
**Class XI-Computer Science**

**MM-70**

**Time Allowed: 03 Hrs.**

**Instructions: -**

1. This question paper contains five sections, Section A to E.
2. All questions are compulsory.
3. Section A has 18 questions carrying 01 marks each.
4. Section B has 07 Very Short Answer type questions carrying 02 marks each.
5. Section C has 05 Short Answer type questions carrying 03 marks each.
6. Section D has 03 Long Answer type questions carrying 05 marks each.
7. Section E has 02 questions carrying 04 marks each.

**Section-A**

1. Which statement is correct?  
(a) List is immutable && Tuple is mutable      (b) List is mutable && Tuple is immutable  
(c) Both are Mutable.      (d) Both are Immutable
2. ASCII code is a 7 bit code for  
(a) letters      (b) numbers      (c) other symbols      (d) all of these
3. Consider the loop given below:  
for i in range ( 10, 2, -3):  
    break  
What will be the final value of i after this loop:  
a). 5    b). 10    c). 4    d).-3
4. Choose the correct data type for given example.  
a=(5,4,9,'a','b')  
(a) List      (b) Tuple      (c) string      (d) None of above
5. Which statement can be used when a statement is required syntactically but the program requires no action.  
a. break      b. for      c. continue      d. Pass
6. Write the output of following code:  
first=" Programming Language Learning work"  
first.partition("Language")  
  
a. ('Programming ', 'Language', ' Learning work')  
b. ('Programming Language', ' Learning work')  
c. ('Programming ', 'Language Learning work')  
d. None of these
7. Which of the following is not a keyword?  
a. for      b. if      c. day      d. while

8. Function range(8,1,-2) will display

- a. [8,7,6,5,4,3,2,1]      b. [7,5,3]
- c. [8,7,6,5,4,3,2]      d. [8,6,4,2]

9. The function Dict( ) is used to create :

- a. Mutable Dictionary      b. Immutable Dictionary
- c. Ordered Dictionary      d. Empty Dictionary

10. Given is a dictionary:

D={1:10, 2:[1,2,3], 'Name':'Ashok', [4,5,6]:20}

Which of the following is an invalid key:

- a. 1      b. 'Name'      c. [4,5,6]      d. None of these

11. The tuple( ) is used to convert-

- a. A complex number into a tuple      b. Other sequence into a tuple
- c. Range values into a tuple      d. None of these

12. Predict the output of the given code:

```
L1=['a','e','i','o','u']
```

```
L1.remove('o')
```

```
L1.insert(1,'p')
```

```
print(L1)
```

- a. ['a', 'p', 'e', 'i', 'u']      b. ['a', 'p', 'e', 'i', 'o']      c. ['p', 'a', 'e', 'i', 'u']      d. None of these

13. The function which converts string into sentence case is:

- a. str.capital( )      b. str.capitalize( )      c. str.upper( )      d. str.sentence( )

14. if wd="Python" then command print(wd[-5:-2]) will print:

- a. yth      b. ytho      c. oht      d. None of these

15. To run a loop 10 times which of the following statements will be used:

- a. for i in range(6,26,2)      b. for l in range(3,30,3)
- c. for l in range(11)      d. all of these

16. Which of the following is the correct representation of two input XOR gate:

- a.  $A \oplus B$       b. A+B      c.  $A \odot B$       d. None of these

Q17 and 18 are ASSERTION AND REASONING based questions. Mark the correct choice as

- (a) Both A and R are true and R is the correct explanation for A
- (b) Both A and R are true and R is not the correct explanation for A
- (c) A is True but R is False
- (d) A is false but R is True

17. Assertion (A): Items in dictionaries are unordered.

Reason (R): We may not get back the data in which order we had entered the data initially.

18. Assertion (A) In python Tuple is immutable collection of data.  
Reason (R ) It means that any change in data is maintained in the same place.

### Section-B (2 Marks each)

19. In what way Hexadecimal number is different from numbers in other bases?  
20. What is a universal gate. Write two examples of it.  
21. Write down two examples where Python can be used other than programming.  
22. Predict the output  
    `L=[2,3,4,6,9,3,8,9]`  
    `print(L.index(4))`  
    `print(L.count(3))`  
    `L.append(L.count(9))`  
    `print(L)`  
23. Draw the logic circuit for the following equation:  $A'B' + (AB)'$   
24. What is unpacking of a tuple, explain with one example.

OR

Predict the output:

```
s="welcome2cs"

n = len(s)
m=""
for i in range(0, n):
    if (s[i] >= 'a' and s[i] <= 'm'):
        m = m + s[i].upper()
    elif (s[i] >= 'n' and s[i] <= 'z'):
        m = m + s[i-1]
    elif (s[i].isupper()):
        m = m + s[i].lower()
    else:
        m = m + '&'
print(m)
```

25. Following code contains an endless loop. Could you find out why? Suggest a solution.

```
n=10
result=1
while (n > 0):
    result = result + n**3
    n=n+1
print(result)
```

### Section-C (3 marks each)

26. Write a program which replaces all vowels in the string with '\*'

Example: If string is "abcdef" then it would be "\*bcd\*f"

27. State and verify the following with truth table: 1. Involution law 2. Associative law

28. The radius of a circle can be calculated by using the formula  $\text{Area} = \frac{22}{7} r^2$  where r is radius of a circle.

Hence the radius can be calculated as  $r = \sqrt{\frac{7 * \text{Area}}{22}}$

Write a program to calculate and display the radius of a circle by taking area as an input.

**OR**

Predict the output

```
for name in ['Jayes', 'Ramya', 'Taruna', 'Suraj']:  
    print(name)  
    if name[0] == 'T':  
        break  
    else:  
        print('Finished')  
print("Got it !")
```

29. A library charges fine for returning book after the due date, as per the conditions given below:

No of days	Fine
For first ten days	40 paisa per day
Eleven to twenty days	60 paisa per day
More than 20 days	80 paisa per day

Take number of days as input and display fine in Rupees and paisa.

**OR**

Write python code to display the given pattern:

```
5 5 5 5  
4 4 4 4  
3 3 3  
2 2  
1
```

30. Write a program to accept a number and check whether it is a Spy number or not.

(A number is said to be spy if the sum of its digit equals the product of its digit.)

Sample input: 1124

Sum of its digit:  $1+1+2+4=8$

Product of its digit:  $1*1*2*4=8$  therefore number is a spy number.

**Section-D (5 marks each)**

31. (a) Write a program to input a string and calculate the length of each word present in string and print length along with the word. (3)  
(b) Write a program to read a string and display it in reverse order- display one character per line. (2)
32. Take a list of 10 elements. Split it into middle and store the elements in two different lists.  
E.g.- INITIAL list : [5 10 6 12 3 25 66 44 1 90] After splitting : [5 10 6 12 3] and [25 66 44 1 90]
33. Write a program to input one tuple of 5 elements, then input one number, add 5 to it if present, otherwise display an appropriate message. At the end display modified tuple.

**Section-E (4 marks each)**

34. Write a program to create a dictionary with the name and marks of computer science of 5 students in a class and displays the name of students whose marks are greater than 80. Also display number of students secured more than 80 marks.
35. Explain following functions (any two):  
a. Setdefault () of Dictionaries.  
b. Pretty printing of Dictionary  
c. sorted () of List

**OR**

Convert following as directed:

1.  $(1110011101011)_2$  into Hexa decimal; form
2.  $(101101001101)_2$  into Octal form
3.  $(3AE)_{16}$  into Decimal form
4.  $(11110010)_2$  into Decimal form