2023 (MAY)

BCA 2nd Sem Examination

BCA203 : Programming using Python (NEW)

Time : 3hrs **Full Marks : 75**

Pass Marks : 30

There will be 10 (ten) questions in Part - A which carries 1 mark each. And all questions of Part – A is compulsory. Part – B contains 8 (eight) questions which carries 2 marks each, out of which 5 (five) questions need to be answered. Part - C contains 8 (eight) questions which carries 5 marks each, out of which 5 (five) questions need to be answered. Part – D contains 5 (five) questions which carries 10 mars each, out of which 3 (three) questions need to be answered.

PART – A

Each question carries 1 mark and are compulsory. (10 x 1 = 10)

1. What will be the output after the following statements?

```
a = 0
b = 3
while a + b < 8:
    a += 1
    print(a, end=" ")
```

(A) 0 1 2 3 4 (B) 1 2 3 4 5 6

(C) 1 2 3 4 5 (D) None of these

2. Raw data assigned to a variable is called as _____.

(A) variable (B) literal

(C) identifier (D) comment

3.
```
if 2 + 5 == 8:
    print("TRUE")
else:
    print("FALSE")
print("TRUE")
```

(A) TRUE (B) TRUE FALSE
(C) TRUE TRUE (D) FALSE TRUE

4. What will be the output of the following?

```
print((range(4)))
```

(A) 0,1,2,3 (B) [0,1,2,3] (C) range(0,4) (D) (0,1,2,3)

5. Assume q= [3, 4, 5, 20, 5, 25, 1, 3], then what will be the items of q list after q.pop(1) ?

(A) [3, 4, 5, 20, 5, 25, 1, 3] (B) [1, 3, 3, 4, 5, 5, 20, 25]
(C) [3, 5, 20, 5, 25, 1, 3] (D) [1, 3, 4, 5, 20, 5, 25]

6. What is the output of the following code ?

```
ms = ('A', 'D', 'H', 'U', 'N', 'I', 'C')
print(ms[1:4])
```

(A) ('D', 'H', 'U') (B) ('A', 'D', 'H', 'U', 'N', 'I', 'C')
(C) ('D', 'H', 'U', 'N', 'I', 'C') (D) None of these

7. What value does the following expression evaluate to ?

```
print(5 + 8 * ((3* 5)-9) /10)
```

(A) 9.0 (B) 9.8 (C) 10 (D) 10.0

8. What value does the following expression evaluate to ?

```
x = 5
while x < 10:
    print(x, end=' ')
```

(A) Closed loop (B) One time loop
(C) Infinite loop (D) Evergreen loop

9. _____ immediately terminates the current loop iteration.

(A) break (B) pass (C) continue (D) None of these

10. How can we create an empty list in Python ?

(A) list=() (B) list.null (C) null.list (D) list=[ ]

PART – B

Answer any 5 (five) questions from the following : (5 x 2 = 10)

11. Why is indentation important in Python?
12. Write the output for the following:

```
str = input ( "Enter a string :" )
print ( "Input string is ", str )
print ( "Type is :", type ( str ) )
```

13. What is the difference between * and **? Cite with an example each.
14. Write a program to read three real numbers from the keyboard and find out their sum and average.
15. Write a program to count the number of digits in entered number.
16. Suggest the appropriate functions for the following tasks :
    a) Capitalize all letters of a string
    b) Remove whitespace from the beginning of a string
    c) Split a string into a list of 'words'
    d) Find length of a string
17. What is the difference between list and tuple?
18. Write the statement to update the dictionary.

PART – C

Answer any 5 (five) questions from the following : (5 x 5 = 25)

19. Explain constructors in Python with an example each.
20. Explain the types of Python operators along with an example each.
21. Write a program to print the pattern :

```
*
* * *
* * * * *
```

22. Write a program to print all the Prime numbers within a given range and display its output.
23. Write a program to print Floyd's triangle and display its output.
24. Write a program to count Alphabets, Digits and Special characters in a String and also display its output.
25. Write a program to find the frequency of numbers in a List and display its output.
26. Discuss different File functions in Python using an example each.

PART – D

Answer any 3 (three) questions from the following : (3 x 10 = 30)

27. Explain Inheritance and its type in Python along with an example each.
28. Write a menu-driven program to create mathematical 3D objects Curve, Sphere, Cone Arrow, Ring and Cylinder.
29. Write a function that finds the sum of the n terms of the following series and also display its output.
    a) $1 - \frac{x^2}{2!} + \frac{x^4}{4!} - \frac{x^6}{6!} + \cdots \ldots \ldots \frac{x^n}{n!}$
    b) $1 + \frac{x^2}{2!} + \frac{x^4}{4!} + \frac{x^6}{6!} + \cdots \ldots \ldots \ldots \frac{x^n}{n!}$
30. What is a Destructors in Python? Write the advantages of using Destructors in Python. Give an example of using Destructors in recursive functions.
31. Explain the types of operators in Python along with an example each.