HMD
12 - Std
Time : 3.00 hrs.

HALF YEARLY EXAMINATION - 2022 150
COMPUTER SCIENCE

|J|2|C|0|1|2|

Marks : 70

PART – I

Answer all the Questions.

15 x 1 = 15

1. The variables in a function definition are called as
   a) Subroutines   b) Function   c) Definition   d) Parameters

2. The data structure which is a mutable ordered sequence of elements is called
   a)Built in   b)List   c)Tuple   d) Derived data

3. All members in a Python class are by default
   a)public   b)protected   c) private   d) secured members

4. The complexity of linear search algorithm is
   a) O(n)   b) O(log n)   c) O(n2)   d) O(n log n)

5. Which of the following character is used to give comments in Python program
   a)#   b)&   c)@   d)$

6. What is the output of the following snippet?
   ```
   i=1
      while True:
         if i % 3 == 0:
            break
         print(i, end='')
   i+=1
   ```
   a)12   b)123   c)1234   d)124

7. Which function is called anonymous function?
   a) Lambda   b)recursion   c)function   d)define

8. Which of the following is the slicing operator
   a){ }   b)[ ]   c)<>   d)( )

9. What is the use of type() function in python?
   a)To create a Tuple   b)To know the type of an element in tuple
   c)To know the Data type of python object   d)To create a type

10. Which of the following method is automatically executed when an object is created?
    a)_ object_ ( )   b)_ del_( )   c)_ rem_ ( )   d)_ init_ ( )

11. Who developed ER model?
    a) Chen   b) EF Codd   c) Chend   d)Chand

12. The expansion of CRLF is
    a) Control Return and Line Feed   b) Carriage Return and Last Feed
    c) Control Router and Line Feed   d) Carriage Return and Line Feed

13. Importing C++ program in a python program is called
    a) Wrapping   b) Downloading   c) Interconnecting   d) Parsing

14. Which of the following is a control structure used to traverse and fetch the records of the database
    a) pointer   b) key   c) cursor   d) insertion point

15. Identify the package manager for python packages or modules
    a) Matplotlib   b)PIP   c) PIPE   d) python packages

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PART – II

Answer any *six* questions. Q.No.24 is compulsory.   6 x 2 = 12

16. What is impure function?
17. What do you mean by Namespaces?
18. What are the different operators that can be used in Python?
19. Define control structures.
20. What are DCL commands in SQL?
21. List the types of visualization in Matplotlib?
22. What is List in Python?
23. What is the purpose of destructor?
24. What will be the output of the following snippet?

```
set_a = {'A,' 2, 4, 'D'}
set_b = {'A', 'B', 'C', 'D'}
print(set_a&set_b)
```

PART – III

Answer any *six* questions. Q.No.33 is compulsory.   6 x 3 = 18

25. List the characteristics of an algorithm.
26. Identify which of the following are List, Tuple and class?
    a) arr[1,2,34]
    b) arr(1,2,34)
    c) student[rno, name, mark]
    d) day = ('sun','mon','tue','wed')
    e) x=[2, 5, 6.5, [5, 6], 8.2]
    f) employee[eno,ename,esal,eaddress]
27. Write the syntax of while loop.
28. What are the points to be noted while defining a function?
29. How index value allocated to each character of a string in Python?
30. Explain Cartesian product with a suitable example.
31. Write a SQL statement to modify the student table structure by adding a new field.
32. What is the difference between reader( ) and DictReader( ) function?
33. Consider the following tuple declaration:
    >>>Mytuple = tuple([x **2 for x in range(2,11,2)])
         What will be the output of the following print statements?
    (i)   >>> print(Mytuple[1:3])
    (ii)   >>> print(Mytuple[3:])
    (iii)   >>> print(Mytuple[:])

PART – IV

Answer all the following questions.   5 x 5 = 25

34. (a) Explain LEGB rule with example. *(OR)*
    (b) Explain the Bubble sort algorithm with example.
35. (a) What are the different type of loops in Python? Explain with an example. *(OR)*
    (b) Explain about string operators in Python with suitable example.
36. (a) Write a note on aggregate functions of SQL. *(OR)*
    (b) Find the output of the following python code

```
class Sample:
    num = 0
    def _ init_ (self,var):
        Sample.num+= 1
        self.var = var
        print("The object value is = ".var)
        print("The count of object created = ". Sample.num)
S1=Sample(15)
S2=Sample(35)
S3=Sample(45)
```

37. (a) Explain the components of DBMS *(OR)* (b) Explain the various buttons in a matplotlib window.
38. (a) Differentiate Excel file and CSV file. *(OR)*
    (b) Write the syntax for getopt( ) and explain its arguments and return values.

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