ST. JOSEPH'S COLLEGE (AUTONOMOUS), BENGALURU-27
M. Sc (Big Data Analytics) - I SEMESTER
SEMESTER EXAMINATION - OCTOBER 2021
(Examination conducted in January-March 2022)
BDA 1621 – PYTHON PROGRAMMING

Time: 2.5 hrs   Max Marks: 70

This question paper contains FOUR printed pages and THREE parts

PART A
Answer ALL the questions   20 X 1 = 20

1. Given a function that does not return any value, What value is thrown by default when executed in shell.
    a. int
    b. bool
    c. void
    d. none

2. _____ and _____ are two ways to comment in Python.
    a. Single and Multilevel comments
    b. Single line and Double line comments
    c. One and Many line comments
    d. Single line and Multiline comments

3. Multiline comments can be done by adding _____ on each end of the comment.
    a. "' "'(triple quote)
    b. # (Hash)
    c. $ (dollar)
    d. % (modulus)

4. The operators is and is not are _____.
    a. Identity Operators
    b. Comparison Operators
    c. Membership Operators
    d. Unary Operators

5. The step argument in range() function _____.
    a. indicates the beginning of the sequence
    b. indicates the end of the sequence
    c. indicates the difference between every two consecutive numbers in the sequence
    d. generates numbers up to a specified value

6. Judge the output of the following code snippet.
   ```
   for i in range(10):
   if i == 5:
   break
   else:
   print(i)
   ```
   a. 0 1 2 3 4
   b. 0 1 2 3 4 5
   c. 0 1 2 3
   d. 1 2 3 4 5

7. When is the finally block executed?
   a. When an exception occurs
   b. When there is no exception
   c. Only if some condition that has been specified is satisfied
   d. always

8. Predict the output of the following code?
   ```
   def tweet():
   print("Python Programming!")
   tweet()
   ```
   a. Python Programming!
   b. Indentation Error
   c. Syntax Error
   d. Name Error

9. For the given string s = "nostradamus", which of the following statement is used to retrieve the character t?
   a. s[3]
   b. s.getitem(3)
   c. s.__getitem__(3)
   d. s.getItem(3)

10. Deduce the output of the following code:
    ```
    print('Data Science'.istitle())
    ```
    a. True
    b. False
    c. Error
    d. None

11. To add a new element to a list the statement used is?
    a. zoo. add(5)
    b. zoo.append("snake")
    c. zoo.addLast(5)
    d. zoo.addend(4)

12. Which of the following statement is false about the dictionary?
    a. The values of a dictionary can be accessed using keys.
    b. The keys of a dictionary can be accessed using values.
    c. Dictionaries are not ordered.
    d. Dictionaries are mutable.

13. The method that returns the value for the key present in the dictionary and if the key is not present then it inserts the key with default value into the dictionary.
    a. update()
    b. fromkeys()
    c. setdefault()
    d. get()
14. What is the output of the following code:
    number_1 = {1,2,3,4,5}
    number_2 = {1,2,3}
    number_1.difference(number_2)
    a. {4, 5}
    b. {1, 2, 3}
    c. (4, 5)
    d. [4, 5]
15. Tuple unpacking requires
    a. an equal number of variables on the left side to the number of items in the tuple.
    b. greater number of variables on the left side to the number of items in the tuple.
    c. less number of variables on the left side to the number of items in the tuple.
    d. Does not require any variables.
16. The readline() method returns
    a. str
    b. a list of lines
    c. a list of single characters
    d. a list of integers
17. The correct way of inheriting a derived class from the base class is
    a. class (Base) Derived:
    b. class Derived (Base):
    c. class (Base) Derived:
    d. class Base (Derived):
18. Duck-typing in Python is
    a. Makes the program code smaller
    b. More restriction on the type values that can be passed to a given method.
    c. No restriction on the type values that can be passed to a given method.
    d. An object's suitability is determined by the presence of methods and variables rather than the actual type of the object.
19. The syntax for using super() in derived class __init__() method definition looks like
    a. super().__init__(baseclassparameters)
    b. init__.super()
    c. super().__init__(derivedclassparameters)
    d. super()
20. The + operator is overloaded using the method
    a. __add__()
    b. __plus__()
    c. __sum__()
    d. __total__()

PART B

21. Give a note on each of the below Python language constructs:
    (i) quotes (single, double and triple) (ii) multiline statements (iii) indentation
22. Differentiate the syntax of ***if...else*** and ***if...elif...else*** with an example.
23. Consider the following list
    list1 = [5,8,11,15,17,22]
    i)   list1[0:4]   ii) list1[0:-2]   iii) list1[::-1]   iv) list1[-1:-5]
    i)   list1[:]
24. What is lambda function? What are the characteristics of a lambda function? Give an example.
25. Explain the role of Exception Handling in Python. How Exception differs from Assertion?
26. Describe with an example how to read and write to a text file.
27. Write about class constructor(_init_()),self-variable.
28. Discuss in brief about polymorphism in python with an example.

PART C

29. Write a program that has the dictionary of your friends' names as keys and phone numbers as its values. Print the dictionary in a sorted order. Prompt the user to enter the name and check if it is present in the dictionary. If the name is not present, then enter the details in the dictionary.
30. Create a class called library with data attributes like acc_number, publisher, title and author. The methods of the class should include
    a. read() – acc_number, title, author.
    b. compute() - to accept the number of days late, calculate and display the fine charged at the rate of $1.50 per day.
    c. display the data.
31. Create two base classes named clock and calendar. Based on these two class define a class calendarclock, which inherits from both the classes which displays month details, date and time.