SSR DEGREE COLLEGE (AUTONOMOUS) NIZAMABAD
SEM – II
AI/ML INTERNAL II (QUESTION BANK)
SUBJECT : PYTHON PROGRAMMING

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1. Which of the following is the correct way to create a list in Python?

A) `list = (1, 2, 3)`
B) `list = [1, 2, 3]`
C) `list = {1, 2, 3}`
D) `list = <1, 2, 3>`

Answer: ✓ B) `list = [1, 2, 3]`

2. What is the output of the following code?

```
lst = [1, 2, 3, 4]
print(lst[2])
```

A) `1`
B) `2`
C) `3`
D) `4`

Answer: ✓ C) `3`

3. Which of the following methods adds an element at the end of a list?

A) `append()`
B) `insert()`
C) `extend()`
D) `add()`

Answer: ✓ A) `append()`

4. What will the following code output?

```
lst = [1, 2, 3]
lst.insert(1, 5)
print(lst)
```

A) `[5, 1, 2, 3]`
B) `[1, 5, 2, 3]`

C) `[1, 2, 3, 5]`
D) `[1, 2, 5, 3]`

Answer: ✓ B) `[1, 5, 2, 3]`

5. Which of the following is a correct way to create a tuple?
A) `t = [1, 2, 3]`
B) `t = (1, 2, 3)`
C) `t = {1, 2, 3}`
D) `t = <1, 2, 3>`

Answer: ✓ B) `t = (1, 2, 3)`

6. Tuples in Python are:
A) Mutable
B) Immutable
C) Dynamic
D) None of the above

Answer: ✓ B) Immutable

7. How can you access the third element of a tuple `t = (10, 20, 30, 40)`?
A) `t[3]`
B) `t[2]`
C) `t(2)`
D) `t[4]`

Answer: ✓ B) `t[2]`

8. Which of the following correctly defines a Python dictionary?
A) `d = [1: 'a', 2: 'b']`
B) `d = {1: 'a', 2: 'b'}`
C) `d = (1: 'a', 2: 'b')`
D) `d = <1: 'a', 2: 'b'>`

Answer: ✓ B) `d = {1: 'a', 2: 'b'}`

9. In a dictionary, data is stored in the form of:
A) Key-value pairs
B) Indexed elements
C) Sequential elements
D) None of the above

Answer: ✓ A) Key-value pairs

9. Which mode is used to open a file for writing in Python, creating the file if it doesn't exist?
A) `'r'`
B) `'w'`
C) `'a'`
D) `'x'`

Answer: ✓ B) `'w'`

10. What does the following code do?

```
with open('data.txt', 'r') as f:
    content = f.read()
```

A) Writes content to `data.txt`
B) Reads the entire content of `data.txt` into the variable `content`
C) Appends content to `data.txt`
D) Deletes `data.txt`

Answer: ✓ B) Reads the entire content of `data.txt` into the variable `content`

11. Which exception is raised when dividing a number by zero in Python?
A) `ValueError`
B) `ZeroDivisionError`
C) `TypeError`
D) `IndexError`

Answer: ✓ B) `ZeroDivisionError`

12. What is the purpose of a `try` block in Python?
A) To define a function
B) To execute code that might raise an exception
C) To handle file operations only
D) To end a loop

Answer: ✓ B) To execute code that might raise an exception

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13. Which keyword is used to handle exceptions in Python?
A) `catch`
B) `except`
C) `error`
D) `finally`

Answer: ✓ B) `except`

14. Which of the following keywords is used to define a class in Python?

A) `function`
B) `class`
C) `object`
D) `def`

Answer: ✓ B) `class`

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15. Which of the following correctly creates an object of a class `Person`?

A) `obj = Person`
B) `obj = Person()`
C) `obj = new Person()`
D) `obj = create Person()`

Answer: ✓ B) `obj = Person()`

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16. In Python OOP, the `__init__()` method is used for:

A) Destroying an object
B) Inheriting a class
C) Initializing a newly created object
D) Deleting a class

Answer: ✓ C) Initializing a newly created object

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17. What is `self` in Python classes?

A) A keyword to create a new class
B) A reference to the current instance of the class
C) A variable to store class methods
D) A function to initialize the class

Answer: ✓ B) A reference to the current instance of the class

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18. Which of the following is an example of inheritance in Python?

A) `class Child(Parent):`
B) `class Child:`
C) `def Parent():`
D) `class Parent(Child):`

Answer: ✓ A) `class Child(Parent):`

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19. What is the output of the following code?

```
class Test:
    x = 10
print(Test.x)
```

A) `0`
B) `10`
C) `None`
D) Error

Answer: ✓ B) `10`

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20. Polymorphism in Python allows:

A) Objects of different classes to be treated as objects of a common superclass
B) Multiple variables in a class
C) Inheriting multiple classes
D) Hiding private variables

Answer: ✓ A) Objects of different classes to be treated as objects of a common superclass

1. A Python list is _____, which means its elements can be modified after creation.
   Answer: mutable
2. A tuple in Python is _____, so its elements cannot be changed once defined.
   Answer: immutable
3. In a dictionary, data is stored in the form of _____ pairs.
   Answer: key-value
4. The method _____() can be used to add a new element to the end of a list.
   Answer: append

5. To access the value associated with a key `'name'` in a dictionary `d`, we write `d[_____]`.
   Answer: 'name'
6. A Python dictionary stores data in _____ pairs.
   Answer: key-value
7. To create an empty dictionary, we use _____.
   Answer: `{}`
8. The method _____() returns all the keys of a dictionary.
   Answer: keys
9. To open a file in Python, we use the _____() function.
   Answer: open
10. The mode `'r'` is used to _____ a file.
    Answer: read
11. To handle errors that may occur during program execution, we use _____ blocks.
    Answer: try-except
12. If a file operation fails and is not handled, Python raises an _____.
    Answer: exception
13. A class in Python is defined using the _____ keyword.
    Answer: `class`
14. The _____ method is called automatically when a new object of a class is created.
    Answer: `__init__`
15. Variables that belong to a class and are shared by all objects are called _____ variables.
    Answer: class
16. The concept of restricting access to certain parts of an object is called _____.
    Answer: encapsulation
17. The ability of a function or method to take many forms, such as method overriding, is called _____.
    Answer: polymorphism
18. A constructor in Python is a special method used to _____ an object when it is created.
    Answer: initialize
19. An iterator in Python is an object that can be _____, returning one element at a time.
    Answer: traversed
20. The method _____() returns the next item from an iterator.
    Answer: `__next__`

Descriptive Questions

1. Explain file methods to read and write data?
2. Explain different file modes?
3. What is pickle module and explain its functions?
4. Explain about classes and objects ?
5. What is inheritance and types of inheritance?