

1) What will be the output of the following code snippet?

```
```python
def func(a, b):
 return b if a == 0 else func(b % a, a)

print(func(30, 75))
```
```

a) 10

Explanation: This code defines a recursive function `func` to find the greatest common divisor (GCD) of two numbers using the Euclidean algorithm. When called with arguments `(30, 75)`, it returns 15, which is the GCD of 30 and 75.

2) What will be the type of `even_numbers` in the following code?

```
```python
numbers = (4, 7, 19, 2, 89, 45, 72, 22)
sorted_numbers = sorted(numbers)
even = lambda a: a % 2 == 0
even_numbers = filter(even, sorted_numbers)
print(type(even_numbers))
```
```

b) Filter

Explanation: `even_numbers` will be of type `filter`, which is an iterator containing elements for which the function `even` returns `True`.

3) As what datatype are the `*args` stored, when passed into a function?

a) Tuple

Explanation: When `*args` is used in a function definition, the arguments passed to the function are stored as a tuple.

4) What will be the output of the following code snippet?

```
```python
```

```
set1 = {14, 3, 55}
set2 = {82, 49, 62}
set3 = {99, 22, 17}
print(len(set1 + set2 + set3))
...
```

d) Error

Explanation: Sets do not support the `+` operator for concatenation. You can use the `union()` method or the `|` operator instead.

5) What keyword is used in Python to raise exceptions?

a) raise

Explanation: The `raise` keyword is used to explicitly raise exceptions in Python.

6) Which of the following modules need to be imported to handle date time computations in Python?

c) datetime

Explanation: The `datetime` module is used to handle date and time computations in Python.

7) What will be the output of the following code snippet?

```
```python
print(4**3 + (7 + 5)**(1 + 1))
...
```
```

c) 208

Explanation: This expression evaluates to 208:  $(4^3 + (7 + 5)^2) = 64 + 144 = 208$ .

8) Which of the following functions converts date to corresponding time in Python?

b) strftime

Explanation: The `strftime` function is used to convert dates to their corresponding time representations in Python.

9) The Python tuple is \_\_\_\_\_ in nature.

b) immutable

Explanation: Tuples in Python are immutable, meaning their elements cannot be changed after creation.

10) The \_\_\_\_ is a built-in function that returns a range object that consists series of integer numbers, which we can iterate using a for loop.

A. range()

Explanation: The `range()` function returns a range object representing a sequence of numbers.

11) Amongst which of the following is a function which does not have any name?

C. Lambda function

Explanation: Lambda functions are anonymous functions in Python, meaning they don't have a name.

12) The module Pickle is used to \_\_\_\_.

C. Both A and B

Explanation: The `pickle` module in Python is used for serializing and deserializing Python object structures.

13) Amongst which of the following is/are the method of converting Python objects for writing data in a binary file?

B. dump() method

Explanation: The `dump()` method is used to write data from Python objects into a binary file.

14) Amongst which of the following is/are the method used to unpickling data from a binary file?

A. load()

Explanation: The `load()` method is used to unpickle data from a binary file.

15) A text file contains only textual information consisting of \_\_\_\_.

D. All of the mentioned above

Explanation: A text file can contain alphabets, numbers, and special symbols.

16) Which Python code could replace the ellipsis (...) below to get the following output?  
(Select all that apply.)

```
captains = {
 "Enterprise": "Picard",
 "Voyager": "Janeway",
 "Defiant": "Sisko",
}
```

Enterprise Picard,

Voyager Janeway

Defiant Sisko

d) both a and b

Explanation: Both options a) and b) will produce the desired output.

17) Which of the following lines of code will create an empty dictionary named captains?

d) captains = {}

Explanation: Option d) creates an empty dictionary named captains.

18) Which of the following code snippets will successfully add these key-value pairs to the existing captains dictionary?

b) captains["Enterprise"] = "Picard"

captains["Voyager"] = "Janeway"

captains["Defiant"] = "Sisko"

Explanation: Option b) adds the specified key-value pairs to the captains dictionary.

19) You want to display the ship and captain names contained in the dictionary with additional context. How could you do it?

b) for ship, captain in captains.items():

```
print(f"The {ship} is captained by {captain}.")
```

Explanation: Option b) iterates over the items in the captains dictionary and prints the ship and captain names with additional context.

20) What statement will remove the entry for the key "Discovery" from the captains dictionary?

c) del captains["Discovery"]

Explanation: Option c) deletes the entry for the key "Discovery" from the captains dictionary using the `del` keyword.