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

```
def func(a, b):
return b if a == 0 else func(b % a, a)
print(func(30, 75))
```

a) 10

b) 20

c) 15

d) 0

Answer: a) 10

Explanation: This function computes the greatest common divisor (GCD) using recursion.

2.
```
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))
```

a) Int

b) Filter

c) List

d) Tuple

Answer: b) Filter

Explanation: filter() returns a filter object, which is an iterator.

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

a) Tuple

b) List

c) Dictionary

d) none

Answer: a) Tuple

*Explanation: *args are stored as a tuple.*

4. set1 = {14, 3, 55}

set2 = {82, 49, 62}

set3 = {99, 22, 17}

print(len(set1 + set2 + set3))

a) 105

b) 270

c) 0

d) Error

Answer: d) Error

Explanation: Sets cannot be concatenated using the + operator.

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

a) raise

b) try

c) goto

d) except

Answer: a) raise

Explanation: The raise keyword is used to raise exceptions.

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

a) timedate

b) date

c) datetime

d) time

Answer: c) datetime

Explanation: The datetime module provides classes for manipulating dates and times.

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

print(4**3 + (7 + 5)**(1 + 1))

a) 248

b) 169

c) 208

d) 233

Answer: d) 233

*Explanation: 4**3 is 64 and (7+5)**2 is 144, so 64 + 144 + 25 = 233.*

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

a) strptime

b) strftime

c) both a) and b)

d) None

Answer: b) strftime

Explanation: strftime() converts a date to a string format.

9. The python tuple is _____ in nature.

a) mutable

b) immutable

c) unchangeable

d) none

Answer: b) immutable

Explanation: Tuples cannot be changed after their 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()

b) set()

c) dictionary{}

d) None of the mentioned above

Answer: a) range()

Explanation: range() returns a sequence of numbers, which can be iterated over.

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

a) Del function

b) Show function

c) Lambda function

d) None of the mentioned above

Answer: c) Lambda function

Explanation: Lambda functions are anonymous functions.

12. The module Pickle is used to ___.

a) Serializing Python object structure

b) De-serializing Python object structure

c) Both A and B

d) None of the mentioned above

Answer: c) Both A and B

Explanation: Pickle module 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?

a) set() method

b) dump() method

c) load() method

d) None of the mentioned above

Answer: b) dump() method

Explanation: dump() method serializes Python objects for writing to a binary file.

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

a) load()

b) set() method

c) dump() method

d) None of the mentioned above

Answer: a) load()

Explanation: load() method is used to deserialize data from a binary file.

15. A text file contains only textual information consisting of ___.

a) Alphabets

b) Numbers

c) Special symbols

d) All of the mentioned above

Answer: 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

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

print(ship, captain)

b) for ship in captains:

print(ship, captains[ship])

c) for ship in captains:

print(ship, captains)

d) both a and b

Answer: d) both a and b

Explanation: Both a and b correctly iterate over the dictionary and print the required format.

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

a) captains = {dict}

b) type(captains)

c) captains.dict()

d) captains = {}

Answer: d) captains = {}

Explanation: d) is the correct syntax to create an empty dictionary.

18. Now you have your empty dictionary named captains. It's time to add some data! Specifically, you want to add the key-value pairs "Enterprise": "Picard", "Voyager": "Janeway", and "Defiant": "Sisko". Which of the following code snippets will successfully add these key-value pairs to the existing captains dictionary?

a) captains{"Enterprise" = "Picard"}

captains{"Voyager" = "Janeway"}

captains{"Defiant" = "Sisko"}

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

captains["Voyager"] = "Janeway"

captains["Defiant"] = "Sisko"

c) captains = {

"Enterprise": "Picard",

"Voyager": "Janeway",

"Defiant": "Sisko",

}

d) None of the above

**Answer: b) captains["Enterprise"] = "Picard"

captains["Voyager"] = "Janeway"

captains["Defiant"] = "Sisko"**

Explanation: This is the correct syntax for adding key-value pairs to an existing dictionary.

19. You're really building out the Federation Starfleet now! Here's what you have:

captains = {

"Enterprise": "Picard",

"Voyager": "Janeway",

"Defiant": "Sisko",

"Discovery": "unknown",

} Now, say you want to display the ship and captain names contained in the dictionary, but you also want to provide some additional context. How could you do it?

a) for item in captains.items():

print(f"The [ship] is captained by [captain].")

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

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

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

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

d) All are correct

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

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

Explanation: This is the correct syntax and logic for displaying the ship and captain names with additional context.

20. You've created a dictionary, added data, checked for the existence of keys, and iterated over it with a for loop. Now you're ready to delete a key from this dictionary:

captains = {

"Enterprise": "Picard",

"Voyager": "Janeway",

"Defiant": "Sisko",

"Discovery": "unknown",

}

What statement will remove the entry for the key "Discovery"?

a) del captains

b) captains.remove()

c) del captains["Discovery"]

d) captains["Discovery"].pop()

Answer: c) del captains["Discovery"]

Explanation: del captains["Discovery"] correctly removes the key "Discovery" from the dictionary.