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))
def func(a, b):
   return b if a == 0 else func(b % a, a)
print(func(30, 75))  Output: 15
```

```
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))  # class 'filter'
```

3 As what datatype are the *args stored, when passed into

a) Tuple

b) List

c) Dictionary

d) none

Answer: a) If the arguments are passed without any container (e.g., my_function(1, 2, 3)), they are stored in *args as a tuple.

b) If the arguments are passed within square brackets (e.g., my_function([1, 2, 3])), they are stored in *args as a list.

c) If the arguments are passed within curly braces with key-value pairs (e.g., my_function(a=1, b=2, c=3)), they are not stored in *args at all; instead, they are stored in a dictionary.

d) If no arguments are passed when calling the function (e.g., my_function()), *args is an empty tuple or list, and it is not a dictionary.

So, the answer depends on how the arguments are passed when invoking the function.

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

c) 0

This is because you cannot directly concatenate sets using the + operator like you can with lists or strings. If you attempt to do so, you'll encounter a TypeError.

5) 5 What keyword is used in Python

to raise exceptions?

a) raise

b) try

c) goto

d) except

Answer: The correct keyword used in Python to raise exceptions is: a) raise

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: To handle date and time computations in Python, you need to import the datetime module. So the correct option is:

c) datetime

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: The correct answer is:

4**3 is equal to 64 because it's 4 raised to the power of 3.

(7 + 5) is equal to 12 because it's the sum of 7 and 5.

(1 + 1) is equal to 2 because it's the sum of 1 and 1.

Now, let's substitute these values back into the expression:

4**3 + (7 + 5)**(1 + 1) becomes 64 + 12**2.

Calculating further:

12**2 is equal to 144 because it's 12 raised to the power of 2.

Now, the expression is:

64 + 144, which equals 208.

So, the correct answer is:

c) 208

9) The python tuple is _____ in nature. a)

mutable

b) immutable
c)unchangeable

d) none

Answer: Immutable

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: range()

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: Lambda function

Question 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

Question 13

Amongst which of the following is / are the method of convert 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

The dump() method in Python's pickle module is used to convert Python objects into a binary representation for writing data to a file.

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

A. load()
B. set() method
C. dump() method
Answer: A. load()

The load() method in Python's pickle module is used for unpickling (reading and deserializing) 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

A text file can contain alphabets, numbers, and special symbols, making it suitable for storing various types of textual information.

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: Both options (a) and (b) can be used to replace the ellipsis and produce the desired output:

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

This code iterates through the items (ship-captain pairs) in the captains dictionary and prints them as specified.

b) for ship in captains:

print(ship, captains[ship])

This code iterates through the keys (ship names) in the captains dictionary and uses them to access the corresponding values (captains' names) to print them as specified.

So, the correct answer is:

d) both a and b

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

captains = {dict}

b) type(captains)
c) captains.dict()
d) captains = {}

Answer: d) captains = {}

This line of code will create an empty dictionary named captains. The {} syntax is used to define an empty dictionary in Python.

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

Asnwer: The correct code snippet to successfully add the key-value pairs to the existing captains dictionary is:

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

captains["Voyager"] = "Janeway"

captains["Defiant"] = "Sisko"

This code uses square brackets ([]) to access and update the values associated with the keys in the dictionary. Each line assigns a captain's name to a specific starship key, adding the desired key-value pairs to the captains dictionary.

So, option (b) is the correct choice.

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: The correct way to display the ship and captain names with additional context is:

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

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

Option (b) iterates through the items in the captains dictionary using a for loop, unpacks the ship and captain names, and then uses an f-string to provide the desired context and format for displaying the information.

So, option (b) is the correct choice.

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 "Discovery" key ?

a) del captains

b) captains.remove()
c) del captains["Discovery"]
d) captains["Discovery"].pop()

Answer:

The correct statement to remove the entry for the key "Discovery" from the captains dictionary is:

c) del captains["Discovery"]

Option (c) uses the del keyword followed by the dictionary name and the key within square brackets to remove the specified key-value pair from the dictionary.

So, option (c) is the correct choice.