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 = 30 and b = 75, so we execute return b if a == 0 else func(b % a, a):
a is not equal to 0, so we move to the else part.
b % a is 75 % 30, which is 15, so the function call becomes func(15, 30).
Now, a = 15 and b = 30, so we execute return b if a == 0 else func(b % a, a):
a is not equal to 0, so we move to the else part.
b % a is 30 % 15, which is 0, so the function call becomes func(0, 15).
Now, a = 0, so we execute return b if a == 0 else func(b % a, a):
Since a is 0, we return b, which is 15.
So, the output of func(30, 75) is 15.
c) 15

Q.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: The sorted function sorts the elements of the tuple numbers and stores the result in the variable sorted_numbers.
The lambda function even checks whether a number is even or not.
The filter function filters the elements of sorted_numbers based on the condition specified by the lambda function even.
The result of the filter function is stored in the variable even_numbers.
The type function in Python returns the type of the object passed to it.
So, the even_numbers is an iterator, which means the type of even_numbers is not Int, List, or Tuple. It is a specific type in Python, which is filter.
Hence, the correct answer is: b) Filter

Q.3) As what datatype are the *args stored, when passed into
a) Tuple
b) List
c) Dictionary

d) none
Answer: When using the *args syntax in Python, the arguments passed are stored as a tuple.
a) tuple
4) set1 = {14, 3, 55}
set2 = {82, 49, 62}
set3={99,22,17}

Q.4) print(len(set1 + set2 + set3))

a) 105
b) 270
c) 0
d) Error
Answer: In Python, we cannot use the + operator to directly concatenate sets like you can with lists or strings. If you attempt to use the + operator with sets, you will get a TypeError.
So, attempting to add set1 + set2 + set3 will result in an error.
d) error

Q 5) What keyword is used in Python to raise exceptions?
a) raise
b) try
c) goto
d) except
Answer: a) raise

Q.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. c) datetime

Q.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: First, calculate 4**3, which is equal to 64.
Next, calculate (7 + 5)**(1 + 1). Inside the parentheses, you have 7 + 5, which is 12, and 1 + 1, which is 2. So, (7 + 5)**(1 + 1) is equal to 12^2, which is 144.
Now, add these two results together:
64 + 144 = 208
So, the output of the code snippet is:
c) 208

Q.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: strftime function, which stands for "string format time." This function is used to format a datetime object as a string representing the time.
b) strftime

Q.9) The python tuple is _____ in nature.
a) mutable
b)immutable
c)unchangeable
d) none
Answer:b) Immutable
Tuples are an immutable data type in Python, which means once you create a tuple, you cannot change its elements or size.

Q.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()
The range() function in Python is used to generate a range of integer numbers that can be iterated over using a for loop or other iteration mechanisms.

Q .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
A lambda function is a function without a name in Python. It is an anonymous function that is defined using the lambda keyword and is often used for short, simple operations.

Q.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

The pickle module in Python is used for both serializing (converting a Python object into a byte stream) and deserializing (reconstructing a Python object from a byte stream) Python object structures.

Q.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 is used in Python's pickle module to convert Python objects into a binary format for writing data to a binary file. This method is specifically used for serializing and saving Python objects to a file.

Q.14) 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
D. None of the mentioned above
Answer: A. load()
The load() method is used in Python's pickle module to unpickle (deserialize) data from a binary file. It reads the binary data from the file and reconstructs the Python objects that were previously serialized using the dump() method.

Q.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 (letters), numbers, and special symbols, along with whitespace characters. Text files are used to store textual information in a human-readable form, and they can include a wide range of characters and symbols.

Q.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
Enterprise Picard
Voyager Janeway
Defiant Sisko
You can use options (a) and (b) from the given choices. Here's how you can do it with those options:
a) for ship, captain in captains.items():print(ship, captain)
b) for ship in captains:print(ship, captains[ship])

Q.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 = {}
This line of code will create an empty dictionary named captains. It uses the curly braces {} to define an empty dictionary.

Q.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"
This code snippet will successfully add the key-value pairs "Enterprise": "Picard", "Voyager": "Janeway," and "Defiant": "Sisko" to the existing captains dictionary. It uses the correct syntax for adding elements to a dictionary in Python.

Q.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}.")
This code correctly iterates through the captains dictionary and displays ship and captain names in the desired format. The curly braces {} are used to format the output with the ship and captain names.
Q.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"]
To remove the entry for the key "Discovery" from the captains dictionary, you should use the del statement followed by the dictionary name and the key you want to delete. So, the correct statement is del captains["Discovery"]