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

ans. The function func(a, b) implements the Euclidean algorithm, which is used to find the greatest common divisor (GCD) of two numbers. Here's a step-by-step explanation of how the function works for the input (30, 75):

1. func(30, 75):
   - a is not 0, so it returns func(75 % 30, 30).
2. func(75 % 30, 30):
   - 75 % 30 is 15, so it returns func(15, 30).
3. func(15, 30):
   - a is not 0, so it returns func(30 % 15, 15).
4. func(30 % 15, 15):
   - 30 % 15 is 0, so it returns func(0, 15).
5. func(0, 15):
   - a is 0, so it returns b, which is 15.

Therefore, the output of the code print(func(30, 75)) is 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))
```

a) Int

b) Filter

c) List

d) Tuple

ans. In the provided code, even_numbers is the result of applying the filter function with the even lambda function to sorted_numbers. The filter function returns an iterator, which in Python 3 is of type filter.

Therefore, the correct answer is:

b) Filter

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

a) Tuple

b) List

c) Dictionary

d) none

ans. Answer: 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

ans. In Python, you cannot use the + operator to concatenate sets. Attempting to do so will result in a TypeError.

Therefore, the correct answer is:

d) Error

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

a) raise

b) try

c) goto

d) except

ans. The keyword used in Python to raise exceptions is raise.

Therefore, the correct answer 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

ans. To handle date and time computations in Python, you need to import the datetime module.

Therefore, the correct answer 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
Ans.

Let's break down the expression 4**3 + (7 + 5)**(1 + 1) step-by-step to find the output.

1. Compute 4**3:
    - 4**3 is 4 raised to the power of 3, which is 64.
2. Compute (7 + 5)**(1 + 1):
    - First, compute the expression inside the inner parentheses: 7 + 5 which is 12.
    - Next, compute the expression inside the outer parentheses: 1 + 1 which is 2.
    - Now, raise 12 to the power of 2: 12**2 is 144.
3. Add the two results together:
    - 64 + 144 is 208.

Therefore, the correct answer is:

c) 208

8) Which of the following functions converts date to corresponding time in Python? a) strptime b) strftime c) both a) and b) d) None

Ans.

To clarify the functionalities:

- strptime is used to parse a string representing a date/time into a datetime object according to a specified format.
- strftime is used to format a datetime object into a string according to a specified format.

b) strftime

9. **The Python tuple is _____ in nature.**

- **Answer: b) immutable**

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

- **Answer: A. range()**

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

- **Answer: C. Lambda function**

12. **The module pickle is used to ___?**

- **Answer: C. Both A and B**

13. **Amongst which of the following is / are the method(s) to convert Python objects for writing data in a binary file?**

- **Answer: B. dump() method**

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

- **Answer: A. load()**

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

- **Answer: D. All of the mentioned above**

•16 **Which Python code could replace the ellipsis (...) below to get the following output?**

```
python
Copy code
captains = {
 "Enterprise": "Picard",
```

```
 "Voyager": "Janeway",
 "Defiant": "Sisko",
}
```

- **Answer: d) both a and b**

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

- **Answer: d) captains = {}**

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?**

- **Answer: b) captains["Enterprise"] = "Picard" captains["Voyager"] = "Janeway" captains["Defiant"] = "Sisko"**

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

Ans. Answer: b) for ship, captain in captains.items(): print(f"The {ship} is captained by {captain}.")

20. 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(

Ans. Answer: c) del captains["Discovery"]