Q1. Why do we call Python as a general purpose and high-level programming language?

A general-purpose programming language is one that's usable (not just theoretically, but practically) for solving a very wide range of different kinds of problems. So, Python, C, JavaScript etc. are general-purpose programming languages. In Python, you can write detailed numerical simulations, web microservices, file format parsers, and so on. You wouldn't want to use it to write a kernel extension, but general-purpose doesn't mean all possible purposes, just a wide variety of them.

General-purpose languages contrast with special-purpose languages, which are designed to be very good at solving a specific kind of problems, giving little or no thought to other kinds of problems. it would not be pleasant to do so.

Still, there is an advantage to general-purpose languages, even beyond the fact that we haven't designed great special-purpose languages for every possible purpose. For one thing, it means you don't have to learn a thousand languages, only a handful. For another, by giving you more generic problem-solving capabilities, they can often let you see abstract connections between things that weren't obvious when you first glanced at the problem, and then use those abstract connections to organize your code. C's "everything is a file" means that pipes can be thrown into the same selector as sockets, which gives you an obvious way to think of—and implement—graceful shutdown in a socket server without needing an extra thread.

This distinction is obviously vague and subjective around the edges. But the vast majority of languages people design are nowhere near those edges, and its pretty clear which languages are and aren't general-purpose.

Q2. Why is Python called a dynamically typed language?

Python is a dynamically typed language. What is dynamic? We don't have to declare the type of a variable or manage the memory while assigning a value to a variable in Python. Other languages like C, C++, Java, etc.., there is a strict declaration of variables before assigning values to them. We have to declare the kind of variable before assigning a value to it in the languages C, C++, Java, etc.

Python don't have any problem even if we don't declare the type of variable. It states the kind of variable in the runtime of the program. Python also take cares of the memory management which is crucial in programming. So, Python is a dynamically typed language. Let's see one example.

Q3. List some pros and cons of Python programming language?

Proc:

- Python is easy to learn and read
- Python enhances productivity
- Python has a vast collection of libraries
- Python is free, open-source, and has a vibrant community
- Python is a portable programming language
- Python is an interpreted language

Conc:

- Python has speed limitations

- Python is not so strong with mobile computing
- Python can have runtime errors
- Python consumes a lot of memory space
- Python is not easy to test.

Q4. In what all domains can we use Python?

- Machine learning / Artificial intelligence
- Desktop GUI
- Data analytics and data visualization
- Web development
- Game development
- Mobile app development
- Embedded systems

Q5. What are variable and how can we declare them?

A variable declaration always contains two components: the type of the variable and its name. Also, the location of the variable declaration, that is, where the declaration appears in relation to other code elements, determines the scope of the variable.

Q6. How can we take an input from the user in Python?

This means we are able to ask the user for input.

uses the input() method

```
eg.  username = input("Enter username:")
   print("Username is: " + username)
```

Q7. What is the default datatype of the value that has been taken as an input using input() function?

By default, input returns a string. So the name and age will be stored as strings

Q8. What is type casting?

The conversion of one data type into the other data type is known as type casting.

Q9. Can we take more than one input from the user using single input() function? If yes, how? If no, why?

Yes we can take more than one input from the use using single input()function

For eg, x, y= input("Enter two values: ").split()

Q10. What are keywords?

Keywords are the reserved words in Python. We cannot use a keyword as a variable name, function name or any other identifier. They are used to define the syntax and structure of the Python language. In Python, keywords are case sensitive.

Q11. Can we use keywords as a variable? Support your answer with reason.

Keywords are used to define the syntax of the coding. The keyword cannot be used as an identifier, function, and variable name. All the keywords in python are written in lower case except True and False

Reason- It's because keywords have predefined meanings.

Q12. What is indentation? What's the use of indentaion in Python?

Indentation refers to the spaces at the beginning of a code line

Uses- Python uses indentation to indicate a block of code.

Q13. How can we throw some output in Python?

The basic way to do output is the print statement. To end the printed line with a newline, add a print statement without any objects. This will print to any object that implements write(), which includes file objects.

Q14. What are operators in Python?

Operators are special symbols in Python that carry out arithmetic or logical computation. The value that the operator operates on is called the operand.

Q15. What is difference between / and // operators?

- '/' is the division operator.
- '//' is the floor division operator.

Explanation:

- Python supports different types of operators:
- They are arithmetic operators, logical operators, assignment operators, etc.
- '/' and '//' belong to the arithmetic operators.
- '/' is used for the normal division of two numbers.
- '//' is used to obtain the smallest integer nearest to the quotient obtained by dividing two numbers.

Q16. Write a code that gives following as an output. iNeuroniNeuroniNeuroniNeuron

```
multiply_numeric_str = "ineuron" * 4

print("Multiply numeric str =",multiply_numeric_str)
```

Q17. Write a code to take a number as an input from the user and check if the number is odd or even.

```
number = int(input("which number do you want to check ?"))

if number % 2 ==0:
```

```
    print("This is even number")
else:
    print("This is an odd number")
```

Q18. What are boolean operator?

Boolean operators are words that connect search terms (keywords) to create a logical phrase that a database can understand. They allow you to create a complex search that could include multiple concepts and alternative keywords.

Example:AND,OR,NOT.

Q19. What will the output of the following?

1 or 0 = 1

0 and 0 = 0

True and False and True

1 or 0 or 0 = True(1)

Q20. What are conditional statements in Python?

A conditional statement as the name suggests itself, is used to handle conditions in your program. These statements guide the program while making decisions based on the conditions encountered by the program. Python has 3 key Conditional Statements that you should know: if statement. if-else statement.

Q21. What is use of 'if', 'elif' and 'else' keywords?

Python if...elif...else Statement

It allows us to check for multiple expressions. If the condition for if is False , it checks the condition of the next elif block and so on. If all the conditions are False , the body of else is executed.if… elif…else are conditional statements that provide you with the decision making that is required when you want to execute code based on a particular condition. The if… elif…else statement used in Python helps automate that decision making process.

Q22. Write a code to take the age of person as an input and if age >= 18 display "I can vote". If age is < 18 display "I can't vote".

```
age = int(input("what is your age ?"))
if age > 18:
    print("i can vote ")
```

```
else:
    print("i can't vote")
```

Q23. Write a code that displays the sum of all the even numbers from the given list.

```
numbers = [12, 75, 150, 180, 145, 525, 50]
nums = []
print("Enter 7 elements for the list: ")
for i in range(7):
    val = int(input())
    nums.append(val)
sum = 0
for i in range(7):
    if nums[i]%2 == 0:
        sum = sum + nums[i]
print("\nSum of Even Numbers is", sum)
```

Q24. Write a code to take 3 numbers as an input from the user and display the greatest no as output.

```
a = int(input('Enter first number  : '))
b = int(input('Enter second number : '))
c = int(input('Enter third number  : '))
largest = 0
if a > b and a > c:
    largest = a
if b > a and b > c:
    largest = b
if c > a and c > b:
```

```
    largest = c
print(largest, "is the largest of three numbers.")
```

Q25. Write a program to display only those numbers from a list that satisfy the following conditions

- The number must be divisible by five

- If the number is greater than 150, then skip it and move to the next number

- If the number is greater than 500, then stop the loop

```
numbers = [12, 75, 150, 180, 145, 525, 50]


for item in numbers:
    if item  > 500:
        break
    elif item > 150:
        continue
    elif item % 5 == 0:
        print(item)
```