Assignment Part-1

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

Python is called a general-purpose and high-level programming language that has simple, easy-to-learn syntax emphasizes readability and therefore reduces the cost of program maintenance. It is designed in such a way that it can be used for building software, apps, projects in Machine learning, Artificial Intelligence, Web development, Web scrapping, and a wide variety of other domains.

Q2. Why is Python called a dynamically typed language?

Python is an interpreted language that executes its statements line by line; thus, type-checking is done during execution. Hence, is called a dynamically typed language.

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

Pros

1. It is easy to learn and read
2. It enhances productivity
3. It has a vast collection of libraries
4. It is free, open-source, and has a vibrant community
5. It is a portable programming language
6. It is an interpreted language

Cons

1. It is an interpreted language
2. It is not so strong with mobile computing
3. It can have runtime errors
4. It consumes a lot of memory space
5. It's 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 variables and how can we declare them?**

A variable is a name given to a specific memory location. It consists of a datatype and a value is assigned to it.

Ex: var_name = 10

In the above example, the *var_name* is a variable name and *10* is a value assigned by using the '=' operator.

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

In python, the input() function is used to take the input from the user.

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

The default datatype of the value taken as input using the input() function is a *string.*

Q8. What is typecasting?

Type casting is nothing but converting from one data type to another data type.

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

Yes, the user can take multiple inputs using the input() function. In Python, it can be done by two methods.

1. **Using split() method**: This function helps in getting multiple inputs from the user. It breaks the given input by the specified separator. If a separator is not provided then any white space is a separator. Generally, users use a split() method to split a Python string but one can use it in taking multiple inputs.
2. **Using List comprehension:** List comprehension is an elegant way to define and create a list in Python. We can create lists just like mathematical statements in one line only. It is also used in getting multiple inputs from a user.

Q10. What are keywords?

Keywords are some predefined and reserved words in python that have special meanings. Keywords are used to define the syntax of the coding. The keyword cannot be used as an identifier, function, or variable name. All the keywords in python are written in lowercase except True and False.

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

We cannot use a keyword as a variable name, function name, or any other identifier because they are used to define the syntax and structure of the Python language.

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

Python indentation is a way of telling a Python interpreter that the group of statements belongs to a particular block of code. A block is a combination of all these statements. Whitespace is used for indentation in Python.

Q13. How can we throw some output in Python?

By using the print() function, the output can be printed.

Q14. What are operators in Python?

Python Operators in general are used to perform operations on values and variables. There are

1. Arithmetic operators (+, -, * , /, %, //, **)
2. Comparison operators (>, <, ==, !=, >=, <=, is, is not)
3. Logical operators (and, or, not)
4. Bitwise operators (&, |, ~, ^, >>, <<)
5. Assignment operators (=, +=, -=, /=, *=, //=, %=, **=, &=, |=, ^=, >>=, <<=)
6. Identity operators (is, is not)
7. Membership operators (in, not in)

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

/ - This is a division operator and the datatype of the remainder is float

// - This is also a division operator where the datatype of the remainder is int

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

```
iNeuroniNeuroniNeuroniNeuron
```

```
name = "iNeuron"*4
print(name)
```

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("Enter the number: "))
if number%2 == 0:
   print("Even number.")
else:
   print("Odd number.")
```

Q18. What are boolean operator?

A boolean expression is an expression that yields just two outcomes: true or false. There are three types of boolean operators:

- The AND operator (&& or "and")
- The OR operator (|| or "or")
- The NOT operator (not)

Q19. What will the output of the following?

```
1 or 0 : True

0 and 0: True

True and False and True: False

1 or 0 or 0: True
```

Q20. What are conditional statements in Python?

Performing specific tasks based on some conditions. In python, the conditional statements are:

- if
- if..else
- Nested if
- if-elif statements.

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

The if..elif..else statement is used for decision making.

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("Enter your age: "))
if age >= 18:
   print("I can vote")
elif age < 18:
   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]
```

```
numbers = [12, 75, 150, 180, 145, 525, 50]
sum = 0
for i in range(len(numbers)-1):
   num = numbers[i]
   if num%2 == 0:
       sum += num
```

```
print(sum)
```

Output: 342

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

```
#take 3 numbers as an input from the user and display the greatest no as output.
number1 = int(input("Enter 1st number: "))
number2 = int(input("Enter 2nd number: "))
number3 = int(input("Enter 3rd number: "))

if number1>number2 and number1>number3:
   print(number1)
elif number2> number1 and number2>number3:
   print(number2)
else:
   print(number3)
```

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]

```

numbers = [12, 75, 150, 180, 145, 525, 50]
for i in range(len(numbers)-1):
   if numbers[i]%5==0:
       if numbers[i]>150:
           continue
       elif numbers[i]>500:
           break
       print(numbers[i])
```