**Assignment Part-1**
**Note:- Q - Question**
**Ans - Answer**
**Ex Code:- Example Code**
**Exp:- Explanation**
**In:- Input**
**Out:-Output**

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

**Ans:-** Python is not written in a machine-readable language. It is written in a human-readable form, a high-level programming language so the program can easily understand. Using an interpreter the high-level code is converted to machine-readeable code.

**Q2**. Why is Python called a dynamically typed language?

**Ans:-** We don't have to declare the type of a variable or manage the memory while assigning a value to a variable in Python.

**Ex Code:-**

```
a = 5
print(type(5))#Out:- <class 'int'>
```

**Exp:-** a is the Variable declared with an input value of 5 and the type of Variable is Integer. Python while declaring the variable identifies the type of datatype passed.

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

**Ans:- Pros**
* Python is easy to learn and read
* Python has a vast collection of libraries
* Python is a free, open-source
* Python is an interpreted language

**Cons**
* Python consumes a lot of memory space
* Python is not easy to test
* Python can have runtime errors
* Python is not so strong in mobile computing

**Q4**. In what all domains can we use Python?

**Ans:-** * Game Development
* Web Scraping
* Machine Learning, Deep Learning

* Data Analytics

**Q5**. What are variables and how can we declare them?

**Ans:-** Varaible is a name given to a specific memory location.

**Ex Code:-**

```
a = 5
print(a)#Out:- 5
```

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

**Ans:-** Input function can be used to get the input from the user.

**Ex Code:-**

```
name = input('Please enter the name ')
print('Username:-',name)#Out:- Username:- Vikraman
```

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

**Ans:-** The default datatype of the input function is String.

**Ex Code:-**

```
roll_no = input('Please enter roll_no ')#Out:- 102, <class 'str'>
print(roll_no)
print(type(roll_no))
```

**Exp:-** In the above code, the number value is passed from the user. Due to the default type of input function, the roll_no data type is a string.

**Q8.** What is type casting?

**Ans:-** Changing from one datatype to another datatype.

**Ex Code:-**

```
roll_no   = int(input('Please enter roll_no'))#Out:-<class 'int'>
print(type(roll_no))
```

**Exp:-** Since roll_no received from the input function the default datatype is a string, we are typecasting the roll_no to int.

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

**Ans:-** Yes we can use the split function to split the single provided input.

**Ex Code:-**

```
x, y = input("Enter two values: ").split(',')
print("Number of boys:-", x)
print("Number of girls:-", y)
#In:-
Enter two values: 10,55
#Out:-
Number of boys:- 10
Number of girls:- 55
```

**Exp:-** Using Split Function and comma as separated the values can be split.

**Q10**. What are keywords?

**Ans:-** Python keywords are special reserved words that have specific meanings and purposes and can't be used for anything but those specific purposes.

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

**Ans:-** We cannot use a keyword as a variable name, function name, or any other identifier. For example “if” condition cannot be used as a declare variable.

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

**Ans:-** Indentation refers to the spaces at the beginning of a code line. Whereas in other programming languages the indentation in code is for readability only, the indentation in Python is very important. Python uses indentation to indicate a block of code

**Q13.** How can we throw some output in Python?

**Ans:-** Using the print function we can throw the output.

**Ex Code:-**

```
a = 5
b = 6
c = a + b
print('The Value of C',c)
#Out:-
```

```
The Value of C 11
```

**Q14**. What are operators in Python?

**Ans:-** Arithmetic operators, Comparison operators, Logical operators.

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

**Ans:-** '/' is the division operator. '//' is the floor division operator.

**Ex Code:-**

```
a =(5/2)
print('Division operator',a)
b =(5//2)
print('Floor operator',b)
#Out:-
Division operator 2.5
Floor operator 2
```

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

**Ans:-**

**Ex Code:-**

```
val = 'iNeuron'
val_4 = val * 4
print(val_4)
#Out:-
iNeuroniNeuroniNeuroniNeuron
```

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

**Ans:-**

**Ex Code:-**

```
val_inp = int(input('Please enter the input '))
if val_inp%2 == 0:
  print('Entered Number is Even')
else:
  print('Entered Number is Odd')

#In:-
Please enter the input 9
#Out:-
Entered Number is Odd
```

**Q18. What are boolean operator?**

**Ans:-** Boolean is a type of value that can be either True or False It's used to represent thethe truth value of an expression

**Ex Code:-**

```
print(15>10)

#Out:-
True
```

**Exp:-**Above the expression output is True since the value of 15 is greater than 10.

**Q19**. What will the output of the following be?

**1 or 0 Ans:-** 1
**0 and 0 Ans:- 0**
**True and False and True Ans:- False**
**1 or 0 or 0 Ans:- 1**

**Q20.** What are conditional statements in Python?

**Ans:-** Used to handle conditions in your program. These statements guide the program while making decisions based on the conditions encountered by the program.

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

**Ans:-** * If the condition following the keyword if evaluates as true, the block of code will execute.
* You can optionally add an else response that will execute if the condition is false.
* Multiple conditions can be checked by including one or more elif checks after your initial if statement. Just keep in mind that only one condition will execute.

**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".

**Ans:-**

**Ex Code:-**

```
age = int(input('Please enter your age: '))
if age >=18:
   print("I can vote")
else:
   print("I can't vote")
#In:-
Please enter your age: 15
#Out:-
I can't vote
```

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

**Ans:-**

**Ex Code:-**

```
num = [12, 75, 150, 180, 145, 525, 50]
sum = 0
for i in range(len(num)):
  if num[i]%2 == 0:
          sum = sum + num[i]
print("Sum of Even Numbers is", sum)
```

**#Out:-**

```
Sum of Even Numbers is 392
```

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

**Ans:-**

**Ex Code:-**

```
a = int(input('Enter the value of a: '))
b = int(input('Enter the value of b: '))
c = int(input('Enter the value of c: '))

if (a>b and a>c):
  print('Greatest Number is A: ',a)
elif (b>c and b>a):
  print(Greatest Number is B: ',b)
else:
  print('Greatest Number is C: ',c)
```

**#In:-**

```
Enter the value of a: 10
Enter the value of b: 15
Enter the value of c: 20
```

**#Out:-**

```
The Greatest Number is C:  20
```

**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]**

**Ans:-**

**Ex Code:-**

```
num      = [12, 75, 150, 180, 145, 525, 50]
list_sel  = []
for i in num:
   if i > 150:
      if i > 500:
         break
      continue
   if i % 5 == 0:
      list_sel.append(i)

print('List of numbers',list_sel)
#Out:-
List of numbers [75, 150, 145]
```