Python

**(2MARKS)**

**Q1. Write a python program to accept marks of 3 Subjects of a student, print marks and average marks.**

Ans:- a=float(input("Enter marks of first subject"))

b=float(input("Enter marks of second subject"))

c=float(input("Enter marks of third subject"))

average= (a+b+c)/3

print("Marks of first subject is :",a)

print("Marks of second subject is :",b)

print("Marks of third subject is :",c)

print("Average of three subjects is ",average )

**Q2. Write a python program to display a simple message.**

Ans :- print("Hello World ")

**Q3. Define keyword. List any 5 python keywords.**

Ans:- Every programming language has special reserved words which have specific meaning and restrictions around how they should be used .You cannot use these keywords as function names, variables, constants, literals and identifiers. Python 3.8 version of python contains 35 keywords .

Example :- int, break, while ,class ,finally ,continue

**Q4. Explain set symmetric difference operation with example.**

Ans :- Subset is a basic set operation

Subset : If A and B are two sets given and if all elements of B are present in A then B is called subset of A .

Example :- If A={ 1,2,3,4}

B= {2,3}

Then we can say that B is a subset of A .

**Q5. Explain use of identity operators in Python**

Ans:- Identity operators are used to compare the objects, not if they are equal, but if they are actually the same object, with the same memory location:

|  |  |  |  |
| --- | --- | --- | --- |
| **Operator** | **Description** | **Example** |  |
| is | Returns true if both variables are the same object | x is y |  |
| is not | Returns true if both variables are not the same object | x is not y |  |

Example :-

x = ["apple", "banana"]

y = ["apple", "banana"]

z = x

print(x is z)

# returns True because z is the same object as x

print(x is y)

# returns False because x is not the same object as y, even if they have the same content

**Q6. Give general syntax of if-else statement in Python. Also write a simple example code .**

Ans:- If the condition in “if statement is not satisfied then else action block gets executed”.

Syntax:-

if(condition):

# executes the if block statement if condition is true

else:

#executes the else block statement if condition is false

Example :-

int(input(“Enter 1 st number “) )

int(input(“Enter 2 nd number “) )

if(a==b):

print(“Numbers are equal”)

else:

print(“Numbers are not equal “)

**Q7. What will be the output of following code:**

list= [“Python”, “is”, 23, 25.5, “smart”]

print (list [::-1])

Ans :- It will print the reverse string

Output:- ['smart', 25.5, 23, 'is', 'Python']

**Q8. Explain any 4 features of python.**

Ans:- 1) Easy to learn : - As language is easy to understand , it helps students learn it in a comparatively small time period.

2) Platform independence :- Python supports Windows , Linux , MacOS and other operating systems. Your python programs run on any device irrespective of the underlying OS.

3) Object Oriented Programming :- Python follows the Object-oriented programming paradigm. This means that Python has classes, inheritance, and all the usual OOPs concepts like inheritance, data encapsulation, etc .

**Q9. Explain python string with example.**

Ans :- String is nothing but the collection of characters .This character sequence is enclosed within the single quotes or double quotes or triple quotes.

Example:-

x=str(“Hello World”)

Print(x)

**Q10. Explain operators + and \* w. r. t. to string with example.**

Ans:-1) concatenation operation(+)

This operator helps us to concatenate either side of the operator .Operator is symbolized using “+” sign. You can concatenate lists using this operator

Example :-

List1 = [“Siddhi “]

List2=[ “Nikam”]

List3=List1+List2

print (List3)

2) Repetition (\*)

The repetition operator creates multiple copies of list .Operator is symbolized using “\*” sign.

You can use this operator for repetition purpose .

Example:-

List1=[11,22,33,44]

List2=List1\*2

print(List2)

**(4MARKS)**

**Q1. Explain single and multiline comments in python. Explain with example.**

Ans:- Comments can be used to explain Python code.

Comments can be used to make the code more readable.

Comments can be used to prevent execution when testing code.

Single line comment - Comment explaining the code within single line is called single line comment. Single line comment in python should start with symbol #

Example :-

print(“Your name”) #This is a single line comment

Multiline comment - Comment explaining the code more than one line is called multiline comment. Multiline comment in python should be start and end with three single quotes

(‘‘‘)( ’’’ )

Example:-

‘ ‘ ‘ This is a

Multiline

Comment’’’

**Q2. Explain for-loop with general syntax and example. Also write code to show use of for-loop to iterate through set’s elements.**

Ans:- A for loop is used for iterating over a sequence (that is either a list, a tuple, a dictionary, a set, or a string). This is less like the for keyword in other programming languages, and works more like an iterator method as found in other object-orientated programming languages.

Syntax :-for iterator\_var in sequence:statements

Example:-

ThisSet={“Animal”, “Bird”, “Flowers”}

for i in set:

print(“Current member of set :”)

**Q3.Explain following built-in functions w.r.t list**

**i. extend() ii. copy() iii. sort() iv. index()**

Ans:-1) extend() – Extend list by appending the elements provided as argument to the function

Ex : list1=[1,2,3]

list2=[4,5,6]

list2.extend(list1)

print(list2)

2) copy() – It returns a copy of a list

Ex : list1=[1.1,2.2]

List5.copy(list1)

Print(list5)

3)sort()-It is used to sort the list

Ex: list1=[2,5,8,3,5,6]

list1.sort

print(list1)

4) index()- Return index of first occurrence of the element provided as argument to the function extend .

Ex: list1=[4,9,7,8,2,3]

print(“Index of no 9 is” ,list1.index(9))

**Q4. Explain python data types: list and tuple in detail.**

Ans:- List :- List is one of the data structure used in the python . A list represents a collection of items. These items are put in square brackets[] separated by commas. List allows duplication it is ordered and it is mutable means it is changeable data structure . We can put different elements of different data types together in a list .

Example :- list1= [“ orange” ,5, “ banana” , 7]

Tuple :- A tuple represents a collection of items .These items are put in parenthesis() separated by commas .This representation of tuple is very similar to list representation .But the difference is list are enclosed with [] square brackets and tuple ate enclosed by () round brackets .Tuple is immutable means it is unchangeable.

Example :- tuple1=( “ green” , “ blue” , “yellow”)

**Q5. Explain python’s bitwise operators with example code**

Ans:- In Python, bitwise operators are used to perform bitwise calculations on integers. The integers are first converted into binary and then operations are performed on bit by bit.

| OPERATOR | DESCRIPTION | SYNTAX |
| --- | --- | --- |
| & | Bitwise AND | x & y |
| | | Bitwise OR | x | y |
| ~ | Bitwise NOT | ~x |
| ^ | Bitwise XOR | x ^ y |
| >> | Bitwise right shift | x>> |
| << | Bitwise left shift | x<< |

Example:-

a = 10

b = 4

# Print bitwise AND operation

print("a & b =", a & b)

# Print bitwise OR operation

print("a | b =", a | b)

# Print bitwise NOT operation

print("~a =", ~a)

# print bitwise XOR operation

print("a ^ b =", a ^ b)

# print bitwise right shift operator

print("a >> 1 =", a >> 1)

# print bitwise left shift operator

print("a << 1 =", a << 1)

Output :-

a & b = 0

a | b = 14

~a = -11

a ^ b = 14

a >> 1 = 5

a << 1 = 10

**Q6. Explain loop manipulation in python**

Ans:-**Break Statement**

Like other programming languages “Break statement” breaks the flow of control of the program from loop statement and comes out of it.

Example -

L1=[1,2,4,7,9]

For item in L1:

if item==4:

break

print(“The Elements are :”,item)

**Continue Statement**

“Continue Satement” is used when, for a particular condition we want to skip the action block however we also don’t want to break the loop.In other words we can say that only particular situation loop should not get excecuted and further it should execute as a normal one.

Example -

L1=[1,2,4,7,9]

For item in L1:

if item==4:

continue

print(“The Elements are :”,item)

**Pass Statement**

Is is used when a statement is required syntactically but don’t want any code to execute.

Example -

L1=[1,2,4,7,9]

For item in L1:

if item==4:

pass

print(“This is a pass block”)

print(“The Elements are :”,item)

**Q7. Explain dictionary with example (Declaration and Accessibility)**

Ans:- In Python, a Dictionary can be created by placing a sequence of elements within curly {} braces, separated by ‘comma’. Dictionary holds pairs of values, one being the Key and the other corresponding pair element being its Key:value. Values in a dictionary can be of any data type and can be duplicated, whereas keys can’t be repeated and must be immutable.

Example :- Dict={ ‘Brand’ : ‘Yamaha’ ,

‘Model’: ‘R15’ ,

‘Colour’ : ‘Red’

}

print(Dict[Model])

Output:- R15

Q8. Explain tuple with example (declaration and accessibility)

Ans:- Tuple :- A tuple represents a collection of items .These items are put in parenthesis() separated by commas .This representation of tuple is very similar to list representation .But the difference is list are enclosed with [] square brackets and tuple ate enclosed by () round brackets .Tuple is immutable means it is unchangeable.

Example :- tuple1=( “ green” , “ blue” , “yellow”)

print(tuple1[2])

Output:- ‘yellow’