**Assignment Part-2**

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

ANSWER:-python can be used to create a different variety of program and its not specialized for any specific program and also it is easy to used.

Q2. Why is Python called a dynamically typed language?

ANSWER:-python is both a strongly typed and also a dynamically typed language.

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

ANSWER:-prons of python language:

1.easy to use,2.gentle to learning curv,3.varsablity,4.efficient for rapid development,5.truly portability,6.no compile process

Cons of python language:

1.not very fast,2.harder to avoid run time error,3.memory intensive,4.not multithreading support.

Q4. In what all domains can we use Python?

ANSWER:-Domains are used in python from data science ,machine learning ,artificial intelligence ,scientific computing scripting ,game development.

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

ANSWER:=we can declared a variable in python is

* The first characters of variable can be an alphabet or(\_)underscore.
* Special character(@,#,%,^,&,\*)
* Variable names are case sensitive.
* Reserve word can not be declared as variable.

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

ANSWER:-we can take an input from the user in python is input() function.

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

ANSWER:-string() datatype is using of the value that has been taken as input() function.

Q8. What is type casting?

ANSWER:-type casting is the conversation of one data to another data type,using the function as int(),float(),str(),ord()tuple() and extra.

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

ANSWER:-yes ,we can take more than one input from the user using input() function as raw\_ input().

Q10. What are keywords?

ANSWER:-python are special reserved words that have specific meaning for specific purpose.

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

ANSWER:-we cant not use a keyword as a variable name,function name, or any other identifier.

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

ANSWER:-An indentation is the space at the beginning of a line of writing when it start further away from the edge of the paper than all the other lines.

Q13. How can we throw some output in Python?

ANSWER:-we can throw some output in python is use the print statement.

Q14. What are operators in Python?

ANSWER:-the operators in python are 1.arithemetic operators ,

2.assignment operators,

3.coparison operators,

4.logical operators,

5.identity operators,

6.bitwise operators.

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

ANSWER:-‘/’ operator float division(/),‘//’ operator is integer division(//).

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

iNeuroniNeuroniNeuroniNeuron

ANSWER:-print(‘iNeuron iNeuron iNeuron iNeuron’)

Output: iNeuron iNeuron iNeuron iNeuron

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

ANSWER:-#python program to check if number input number is odd or even

#a number is even if division by 2 gives a reminder of 0

#if the reminder is 1,it is an odd number

num= int(input(“enter a number: “))

if(num%2)==0:

print (“{0} is even “.format(num))

else :

print(“{0} is odd “.format(num))

Q18. What are boolean operator?

ANSWER:-the logical operator is and or not are also referred to the as Boolean operator,its evaluating to true or false.

Q19. What will the output of the following?

1 or 0

0 and 0

True and False and True

1 or 0 or 0

ANSWER:-#define to true or false value

a=1

b=0

print(‘enter value of a: ‘,a)

print(‘enter value of b: ‘,b)

print (‘a or b as same:’ a or b)

print( a and b as same:” a and b)

Q20. What are conditional statements in Python?

The conditional statement is used to determine whether a block of code will be executed or not.

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

ANSWER:- Python uses the ‘if’ keyword is used to implement decision control like the condition are true or false ,’elif’ keyword is used for specified condition evaluates as true, ’else’ keywords used for optionally to define an alternative statement if condition evaluated false.

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".

ANSWER:- # the person is available for vote or not

Age=int(input(“enter your age= “))

#if-else statement

If(age>=18):

Print(“eligible to vote”)

Elif(age<18>

Else

Print (“not eligible to 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]

ANSWER:- :-#to display the sum of all the even numbers

num=[12,75,150,180,145,525,50]

print(“enter element of the list:, “)

for i in ranges(7):

val =int(input())

num.append(val)

sum=0

for i in range(7):

if num[i]%2==0

sum= sum+ num[i]

print(sum of even numbers list” ,sum)

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

ANSWER:- #to display numbers as greatest 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

elif b>c:

largest=b

else 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

ANSWER:- #display to divisible number by five

number%5==0

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

ANSWER:- #numbers is greater than 150 than skip it and move to next number

int(12,75,150,180,145,525,50)

Print(“number=:”, int)

If num4>=num3

Print(“num4is greater than num3 :”,num4>=num3

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

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

ANSWER:-

Q26. What is a string? How can we declare string in Python?

ANSWER:-many programming language ,string in python are arrays of bytes representing Unicode characters

a=”hello dhvani:”

print(a[1])

Q27. How can we access the string using its index?

ANSWER:-string is specifying the string name followed by a number in square brackets([]).

Q28. Write a code to get the desired output of the following

string = "Big Data iNeuron"

desired\_output = "iNeuron"

ANSWER:-#declare print to output

string = "Big Data iNeuron":

desired\_output = "iNeuron":

print(string = "Big Data iNeuron"

desired\_output = "iNeuron")

Q29. Write a code to get the desired output of the following

string = "Big Data iNeuron"

desired\_output = "norueNi"

ANSWER:-#create a string in python

Str1=”string=’big data ineuron”(::-1)

Print(str1)

Q30. Resverse the string given in the above question.

ANSWER:- Str1=”string=’big data ineuron”(::-1)

Print(str1)

Q31. How can you delete entire string at once?

ANSWER:-str1=”how are you”

Print(str1)

How are you

del str1

print(str1)

Q32. What is escape sequence?

ANSWER:- An escape sequence is a sequence of characters that, when used inside a character or string, does not represent itself but is converted into another character or series of characters,using the character as’\’.

Q33. How can you print the below string?

ANSWER:-str1=\” ’ineuron’s Big Data Course”\

Print(str1)

'iNeuron's Big Data Course'

Q34. What is a list in Python?

ANSWER:-  Lists are used to store multiple items in a single variable. Lists are one of 4 built-in data types in Python used to store collections of data, the other 3 are Tuple, Set, and Dictionary, all with different qualities and usage.

Q35. How can you create a list in Python?

ANSWER:- To create a list in Python, we use square brackets ([]). Here's what a list looks like

List\_name:[list1,list2,list3]

Q36. How can we access the elements in a list?

ANSWER:-Example=name of month[ “January”,” February”, “march”,” April”]

Print(name of month[0])

Q37. Write a code to access the word "iNeuron" from the given list.

lst = [1,2,3,"Hi",[45,54, "iNeuron"], "Big Data"]

ANSWER:- lst = [1,2,3,"Hi",[45,54, "iNeuron"], "Big Data"]

Print(1st[0])

Q38. Take a list as an input from the user and find the length of the list.

ANSWER:-the length og the list as len()

inp\_lst = ['Python', 'Java', 'Ruby', 'JavaScript']

size = len(inp\_lst)

print(size)

Q39. Add the word "Big" in the 3rd index of the given list.

lst = ["Welcome", "to", "Data", "course"]

ANSWER:-1st=["Welcome", "to", "Data", "course"]

1st.insert(Welcome", "to",’big’)

Print(1st)

Q40. What is a tuple? How is it different from list?

ANSWER:-tuple is a immutable as opposed to lists which are mutable. Therefore, it is possible to change a list but not a tuple. The contents of a tuple cannot change once they have been created in Python due to the immutability of tuples.

Q41. How can you create a tuple in Python?

ANSWER:-the tuple is created in python as placing all the items (elements) inside parentheses () , separated by commas.

Q42. Create a tuple and try to add your name in the tuple. Are you able to do it? Support your answer with reason.

ANSWER:-#create a tuple with add my name

Var1(“dhvani”)

Print(type(var1)) #<class ‘tuple’>

Q43. Can two tuple be appended. If yes, write a code for it. If not, why?

ANSWER:-No,it can’t appended be two touple.

Q44. Take a tuple as an input and print the count of elements in it.

ANSWER:-a=(1,5,6,9,8)

Print(len(a))

Q45. What are sets in Python?

ANSWER:-sets are used to store items in a single variable.

Q46. How can you create a set?

ANSWER:-#create an empty set

Empty\_set=set()

Q47. Create a set and add "iNeuron" in your set.

ANSWER:-#create a set in python

Num(‘1’ ,’dhvani’, )

Print(initial set:’ ,num)

#using add() method

Num.add(‘iNeuron’)

Print(‘updated set:’ ,num)

Q48. Try to add multiple values using add() function.

ANSWER:- set={“apple” ,”orange” ,”cherry”}

Set.add(“mango”)

Print(set)

Q49. How is update() different from add()?

ANSWER:-we use add()method to add single value to a set ,and update() method to add sequence value to a set.

Q50. What is clear() in sets?

ANSWER:-clear() is used to clear all the data from the set data structure.

Q51. What is frozen set?

ANSWER:-frozen set is just an Immutable version of a python set object.

Q52. How is frozen set different from set?

ANSWER:-frozenset is similar to set in python ,except that frozensets are immutable.

Q53. What is union() in sets? Explain via code.

ANSWER:-union() method is returns a set that contain all items from the originsl set.

Example: x={“ineuron” ,”big” ,”data” ,”science”}

Y={“best” ,” course” }

Z=x.union(y)

Print(z)

Q54. What is intersection() in sets? Explain via code.

ANSWER:-the intersection() method returns a set contain the similarity between two or more sets.

Example: x={“ineuron” ,”big” ,”data” ,”science”}

Y={“best” ,” course” }

Z=x.intersection(y)

Print(z)

Q55. What is dictionary ibn Python?

ANSWER:-dictionary are used to store data values in key.

Q56. How is dictionary different from all other data structures.

ANSWER:-the dictionary data structure in python is an unordered collection of items. The dictionary is a slightly more compound data structure.

Q57. How can we delare a dictionary in Python?

ANSWER:-my\_dictionary={ }

Q58. What will the output of the following?

var = {}

print(type(var))

ANSWER:-

Q59. How can we add an element in a dictionary?

ANSWER:-ditctionary\_name[key]=value

Q60. Create a dictionary and access all the values in that dictionary.

ANSWER:-my\_dictionary={

“one” 1,

“two” 2

}

Print(“before:” ,my\_dictionary)

my\_dictionary[“tree”]=3

print(“after:” ,my\_dictionary)

Q61. Create a nested dictionary and access all the element in the inner dictionary.

ANSWER:-nested\_dict{‘dictA’: {key\_1’: ‘value\_1’}}

Q62. What is the use of get() function?

ANSWER:-the get() method returns the value of the item with the specified key.

Q63. What is the use of items() function?

ANSWER:-the item() method returns a view object.

Q64. What is the use of pop() function?

ANSWER:-pop() function that removes an item at the specified index from the list.

Q65. What is the use of popitems() function?

ANSWER:-popitems() method removes the items that was last inserted into the dictionary.

Q66. What is the use of keys() function?

ANSWER:- keys() function is returns a view object in dictionary.

Q67. What is the use of values() function?

ANSWER:-the value() function is used contain of the dictionary.

Q68. What are loops in Python?

ANSWER:-loops are used for iterating over a sequence.

Q69. How many type of loop are there in Python?

ANSWER:-two types of loop in python

1.for

2.while.

Q70. What is the difference between for and while loops?

ANSWER:-for loop is used for when the number of iterations is known and while loop is used when the numbers of iterations is not known.

Q71. What is the use of continue statement?

ANSWER:-the continue statement is returns the control to the beginning of the while loop.

Q72. What is the use of break statement?

ANSWER:-break statement is used to control the sequence of the loop.

Q73. What is the use of pass statement?

ANSWER:-pass statement is used as a placeholder for future code.

Q74. What is the use of range() function?

ANSWER:- range() function is used as immutable sequence of numbers.

Q75. How can you loop over a dictionary?

ANSWER:-loop over a dictionary using a for loop when looping through a dictionary.

**Coding problems**

Q76. Write a Python program to find the factorial of a given number.

ANSWER:-#program to find the factorial num

#factorial of given number

Def fact(n):

Return(math.factorial(n)):

Num=int(input(“enter the number:”))

f=fact(num)

print(“factorial of” ,num “is” ,f)

Q77. Write a Python program to calculate the simple interest. Formula to calculate simple interest is SI = (P*R*T)/100

ANSWER:- P=input(“\n enter the principal amount:”)

R=input(“\n enter the time:”)

Si(int(p) \*float(T) \*float(R) )/100.

Ci=int(p) \*(((1+float(R)/100)\*\*int(T))-1)

Print(“\n simple interest=”,Si)

Q78. Write a Python program to calculate the compound interest. Formula of compound interest is A = P(1+ R/100)^t.

ANSWER:- #Python program to compute compound interest

p = float(input("Enter the principal amount : "))

t = float(input("Enter the number of years : "))

r = float(input("Enter the rate of interest : "))

#compute compound interest

ci = p \* (pow((1 + r / 100), t))

#print

print("Compound interest : {}".format(ci))

Q79. Write a Python program to check if a number is prime or not.

ANSWER:- # Program to check if a number is prime or not

num = 29

# To take input from the user

#num = int(input("Enter a number: "))

# define a flag variable

flag = False

if num == 1:

print(num, "is not a prime number")

elif num > 1:

# check for factors

for i in range(2, num):

if (num % i) == 0:

# if factor is found, set flag to True

flag = True

# break out of loop

Break

# check if flag is True

if flag:

print(num, "is not a prime number")

else:

print(num, "is a prime number")

Q80. Write a Python program to check Armstrong Number.

ANSWER:- # Python program to check if the number is an Armstrong number or not

# take input from the user

num = int(input("Enter a number: "))

# initialize sum

sum = 0

# find the sum of the cube of each digit

temp = num

while temp > 0:

digit = temp % 10

sum += digit \*\* 3

temp //= 10

# display the result

if num == sum:

print(num,"is an Armstrong number")

else:

print(num,"is not an Armstrong number")

Q81. Write a Python program to find the n-th Fibonacci Number.

ANSWER:- # Function for nth Fibonacci number

**def** Fibonacci(n):

**if** n<**=** 0:

        print("Incorrect input")

    # First Fibonacci number is 0

**elif** n **==** 1:

**return** 0

    # Second Fibonacci number is 1

**elif** n **==** 2:

**return** 1

**else**:

**return** Fibonacci(n**-**1)**+**Fibonacci(n**-**2)

# Driver Program

**print**(Fibonacci(10))

Q82. Write a Python program to interchange the first and last element in a list.

ANSWER:- # Python3 program to swap first

# and last element of a list

#Swap function

def swapList(newList):

size = len(newList)

# Swapping

temp = newList[0]

newList[0] = newList[size - 1]

newList[size - 1] = temp

return newList

# Driver code

newList = [12, 35, 9, 56, 24]

print(swapList(newList))

Q83. Write a Python program to swap two elements in a list.

ANSWER:- # Python3 program to swap elements

# at given positions

# Swap function

**def** swapPositions(list, pos1, pos2):

     list[pos1], list[pos2] **=** list[pos2], list[pos1]

**return** list

# Driver function

List **=** [23, 65, 19, 90]

pos1, pos2  **=** 1, 3

print(swapPositions(List, pos1**-**1, pos2**-**1))

Q84. Write a Python program to find N largest element from a list.

ANSWER:- # Python program to find N largest

# element from given list of integers

# Function returns N largest elements

**def** Nmaxelements(list1, N):

    final\_list **=** []

**for** i **in** range(0, N):

        max1 **=** 0

**for** j **in** range(len(list1)):

**if** list1[j] > max1:

                max1 **=** list1[j];

        list1.remove(max1);

        final\_list.append(max1)

    print(final\_list)

# Driver code

list1 **=** [2, 6, 41, 85, 0, 3, 7, 6, 10]

N **=** 2

# Calling the function

Nmaxelements(list1, N)

Q85. Write a Python program to find cumulative sum of a list.

ANSWER:- # Python code to get the Cumulative sum of a list

**def** Cumulative(lists):

     cu\_list **=** []

     length **=** len(lists)

      cu\_list **=** [sum(lists[0:x:1]) **for** x **in** range(0, length**+**1)]

**return** cu\_list[1:]

# Driver Code

lists **=** [10, 20, 30, 40, 50]

print (Cumulative(lists))

Q86. Write a Python program to check if a string is palindrome or not.

ANSWER:- # function which return reverse of a string

**def** isPalindrome(s):

**return** s **==** s[::**-**1]

   # Driver code

s **=** "GUJRAT"

ans **=** isPalindrome(s)

**if** ans:

     print("Yes")

**else**:

     print("No")

Q87. Write a Python program to remove i'th element from a string.

ANSWER:- def remove\_char(s, i):

a = s[ : i]

b = s[i + 1:

return a+b

string = "ineuron"

# Remove ‘I’th index element

i = 5

print(remove\_char(string,i-1))

Q88. Write a Python program to check if a substring is present in a given string.

ANSWER:- # Take input from users

MyString1 **=** "A geek in need is a geek indeed"

**if** "need" **in** MyString1:

**print**("Yes! it is present in the string")

**else**:

     print("No! it is not present")

Q89. Write a Python program to find words which are greater than given length k.

ANSWER:- # Python program to find words which are greater

# than given length k

# Getting input from user

myStr = input('Enter the string : ')

k = int(input('Enter k (value for accepting string) : '))

largerStrings = []

# Finding words with length greater than k

words = myStr.split(" ")

for word in words:

if len(word) > k:

largerStrings.append(word)

# printing values

print("All words which are greater than given length ", k, "are

largerStrings)

Q90. Write a Python program to extract unquire dictionary values.

ANSWER:- # Python3 code to demonstrate working of

# Extract Unique values dictionary values

# Using set comprehension + values() + sorted()

# initializing dictionary

test\_dict = {'gfg': [5, 6, 7, 8],

'is': [10, 11, 7, 5],

'best': [6, 12, 10, 8],

'for': [1, 2, 5]}

# printing original dictionary

print("The original dictionary is : " + str(test\_dict))

# Extract Unique values dictionary values

# Using set comprehension + values() + sorted()

res = list(sorted({ele for val in test\_dict.values() for ele in val}))

print("The unique values list is : " + str(res))

Q91. Write a Python program to merge two dictionary.

ANSWER:- dic1= {'x': 3, 'y' : 8, 'z': 5 }

dic2= {1: 8, 'x': 4, 2: 6}

merge\_dic= {\*\*dic1,\*\*dic2}

print("MERGED: ")

print(merge\_dic)

Q92. Write a Python program to convert a list of tuples into dictionary.

Input : [('Sachin', 10), ('MSD', 7), ('Kohli', 18), ('Rohit', 45)]

Output : {'Sachin': 10, 'MSD': 7, 'Kohli': 18, 'Rohit': 45}

ANSWER:- # Python code to convert into dictionary

def Convert(tup, di):

for a, b in tup:

di.setdefault(a, []).append(b)

return di

tups = [('Sachin', 10), ('MSD', 7), ('Kohli', 18), ('Rohit', 45)]

dictionary = {}

print (Convert(tups, dictionary))

Q93. Write a Python program to create a list of tuples from given list having number and its cube in each tuple.

Input: list = [9, 5, 6]

Output: [(9, 729), (5, 125), (6, 216)]

ANSWER:- # Python program to create a list of tuples

# from given list having number and

# its cube in each tuple

# creating a list

list1 = [9 5, 6]

# using list comprehension to iterate each

# values in list and create a tuple as specified

res = [(val, pow(val, 3)) for val in list1]

print(res)

Q94. Write a Python program to get all combinations of 2 tuples.

Input : test\_tuple1 = (7, 2), test\_tuple2 = (7, 8)

Output : [(7, 7), (7, 8), (2, 7), (2, 8), (7, 7), (7, 2), (8, 7), (8, 2)]

ANSWER:- # tuples

tuple1 = (7, 2)

tuple2 = (7, 8)

# original tuples

print("The tuple 1 : " + str(tuple1))

print("The tuple 2 : " + str(tuple2))

# All pair combinations of 2 tuples

result = list(chain(product(tuple1, tuple2), product(tuple2,tuple1)))

# result

print("The resultant tuple : " + str(result))

Q95. Write a Python program to sort a list of tuples by second item.

Input : [('for', 24), ('Geeks', 8), ('Geeks', 30)]

Output : [('Geeks', 8), ('for', 24), ('Geeks', 30)]

ANSWER:- # Python program to sort a list of tuples by the second Item

# Function to sort the list of tuples by its second item

def Sort\_Tuple(tup):

# getting length of list of tuples

lst = len(tup)

for i in range(0, lst):

for j in range(0, lst-i-1):

if (tup[j][1] > tup[j + 1][1]):

temp = tup[j]

tup[j] = tup[j + 1]

tup[j + 1] = temp

return tup

tup = [('for', 24), ('Geeks', 8), ('Geeks', 30)]

print(Sort\_Tuple(tup))

Q96. Write a python program to print below pattern.

\*

\* \*

\* \* \*

\* \* \* \*

\* \* \* \* \*

ANSWER:- # code to demonstrate star pattern

# Function to demonstrate printing pattern

def pypart(n):

# outer loop to handle number of rows

# n in this case

for i in range(0, n):

# inner loop to handle number of columns

# values changing acc. to outer loop

for j in range(0, i+1):

# printing stars

print("\* ",end="")

# ending line after each row

print("\r")

n = 5

pypart(n)

Q97. Write a python program to print below pattern.

\*

\*\*

\*\*\*

\*\*\*\*

\*\*\*\*\*

ANSWER:- # star pattern

# Function to demonstrate printing pattern

def pypart2(n):

# number of spaces

k = 2\*n - 2

# outer loop to handle number of rows

for i in range(0, n):

# inner loop to handle number spaces

# values changing acc. to requirement

for j in range(0, k):

print(end=" ")

# decrementing k after each loop

k = k - 2

# inner loop to handle number of columns

# values changing acc. to outer loop

for j in range(0, i+1):

# printing stars

print("\* ", end="")

# ending line after each row

print("\r")

n = 5

pypart2(n)

Q98. Write a python program to print below pattern.

\*

\* \*

\* \* \*

\* \* \* \*

\* \* \* \* \*

ANSWER:- # triangle star pattern

# Function to demonstrate printing pattern triangle

def triangle(n):

# number of spaces

k = n - 1

# outer loop to handle number of rows

for i in range(0, n):

# inner loop to handle number spaces

# values changing acc. to requirement

for j in range(0, k):

print(end=" ")

# decrementing k after each loop

k = k - 1

# inner loop to handle number of columns

# values changing acc. to outer loop

for j in range(0, i+1):

# printing stars

print("\* ", end="")

# ending line after each row

print("\r")

n= 5

triangle(n)

Q99. Write a python program to print below pattern.

1

1 2

1 2 3

1 2 3 4

1 2 3 4 5

ANSWER:-

# Function to demonstrate printing pattern of numbers

def numpat(n):

# initialising starting number

num = 1

# outer loop to handle number of rows

for i in range(0, n):

# re assigning num

num = 1

# inner loop to handle number of columns

# values changing acc. to outer loop

for j in range(0, i+1):

# printing number

print(num, end=" ")

# incrementing number at each column

num = num + 1

# ending line after each row

print("\r")

n = 5

numpat(n)

Q100. Write a python program to print below pattern.

A

B B

C C C

D D D D

E E E E E

ANSWER:- # Function to demonstrate printing pattern of alphabets

def alphapat(n):

# initializing value corresponding to 'A'

# ASCII value

num = 65

# outer loop to handle number of rows

# 5 in this case

for i in range(0, n):

# inner loop to handle number of columns

# values changing acc. to outer loop

for j in range(0, i+1):

# explicitly converting to char

ch = chr(num)

# printing char value

print(ch, end=" ")

# incrementing number

num = num + 1

# ending line after each row

print("\r")

n = 5

alphapat(n)