



## CHAPTER – 5 PYTHON - VARIABLES AND OPERATORS

1. What are the different modes that can be used to test Python Program? (R1-2022, APR-2022)
2. Write short notes on Tokens. (PTA4, HY 2019)
3. What are the different operators that can be used in Python? (PTA 5&6)
4. What is a literal? Explain the types of literals?
5. Write short notes on Exponent data?
6. Write a command to execute the python script. (R1-2022)
7. What is keyword? Give examples. (R1-2022)
8. Write a short note on floor division operator.
9. What are keywords in python? (PTA 1)
10. What are the key features of python? (PTA 3)
11. Define Operator and Operand. (GM-2019)
12. Write about input statements in python (or) Input function in python
13. Why the python interpreter does not read the lines which begin with (#) hash symbol? Justify your answer. (GM-2021)
14. Invoking Python IDLE :

## CHAPTER – 6 CONTROL STRUCTURES

1. List the control structures in Python. (PTA 6)
2. Write note on break statement:
3. Write is the syntax of if.. else statement: (R2-2022)
4. Define control structure : (PTA 2) (R2-2022)
5. Write note on range () in loop : (2020) (PTA 2)
6. What is the output of the following snippet? (R2-2022)  

```
for word in 'computer':
    print(word,end=' ')
```
7. Write a program to display sum of n natural numbers. (QY 2019)
8. What will be the *Output* of the following snippet? (PTA 5)  

```
alpha=list(range(65,70))
for x in alpha:
    print(chr(x),end='\t')
```
4. What is the *output* of the following snippet?  

```
i=10
while (i<=15):
    print (i,end='\t')
    i=i+1
```
5. What are the types of looping constructs used in Python? (GM-2019)
6. Write down the syntax of for loop of Python
7. Write the *output* of the following snippet.  

```
i=10
while (i >= 6):
    print (i,end='\t')
    i=i+1
else:
    print ("\nValue of i when the loop exit ",i)
```
8. Write python program to print  

```
1
12
123
1234
12345
```



## CHAPTER – 7 PYTHON FUNCTIONS

1. What is function?
2. Write the different types of function: (PTA 3)
3. What are the main advantages of function? (HY- 2019, R2-2022)
4. What is meant by scope of variable? Mention its types.
5. Define global scope.
6. What is base condition in recursive function : (PTA 6)
7. How to set the limit for recursive function? Give an example (PTA5)
8. What is anonymous function? (R2-2022)
9. Describe the abs ( ) and chr ( ) function. (QY2019)
10. Write the syntax of creating user defined functions in python.(PTA 1)
11. What is the use of Lambda function? [PTA 2]
12. Define Short note on floor division operator. [QY-2019]
13. Recursive function syntax.

## CHAPTER – 8 STRINGS AND STRING MANIPULATION

1. What is String? (R2-2022)
2. Do you modify a string in Python?
3. How will you delete a string in Python?
4. What will be the output of the following python code?  

```
str1 = "School"
print(str1*3)
```
5. What is slicing? (PTA 6)
6. How to access the characters in string? (R2-2022)
7. What will be the output of the given python program (APR-2020)  

```
Str= "COMPUTER SCIENCE"
```

a) print(str\*2)      b) print (str[0:7] )
8. What will be the *output* of the given python program  

```
Str1= "MANIKANDAN"
```

```
print (str1[0:4] )      print (str1[7:] )
```
9. What will be the *output* of the given python program  

```
Str1= "THIRUKKURAL"
```

```
print (str[0:5] )      print (str[:5] )      print (str[6:] )
```
10. What will be the output of the following Python code? (PTA-1)  

```
Str1 = "Madurai" print(Str1*3)
```
11. What will be the *output* of the following Python snippet? (PTA-4)  

```
str1="THOLKAPPIYAM" print(str1[[4:]) print(str1[4::2])
print(str1[::3]) print(str1[:: -3])
```
12. What is the positive and negative subscript value of the character 'h' in string 'school'? [PTA-5]
8. What will be the *output* of the following Python Code? (HY-2019)  

```
str="Chennai"
```

```
print(str*4)
```
9. What are membership operators in Python? (PTA 2)
10. Explain the following function: lower() (QY-2019)
- 11 Write a program to find the length of a string.

## CHAPTER – 9 LISTS, TUPLES, SETS AND DICTIONARY

1. What is List in Python?
2. How will you access the list elements in reverse order? (QY-2019, HY-2019)

3. What will be the value of x in following python code?  
List1=[2,4,6[1,3,5] ]  
x=len(List1)
4. Differentiate del with remove ( ) function of List: (R2-2022)
5. Write the syntax of creating a Tuple with n number of elements.  
(APR 2022)
6. What is set in Python? (PTA-4, QY-2019, R2-2022)
7. Write note about tuple Assignment (R2-2022)
8. What is the output of the below python program? (GM-2021)  
List=[ ]  
for i in range(21):  
if(i%4==0):  
List.append(i)  
print(List)
9. What will be the output of the following snippet? (PTA-3)  
set\_A = {'A', 2, 4 'D'} set\_B = {'A', 'B', 'C', 'D'}  
print(set\_A & set\_B)
10. Write a program to remove duplicates from a list.  
What are the collection data types available in Python? [PTA-6]
11. Write the syntax of creating dictionary in Python. [PTA-1]
12. What is list comprehensions?
13. What is singleton tuple?
14. Write a program that prints the maximum value in a Tuple.  
MyTup=(22,54,32,9,99,104,87) print(max(MyTup))
15. Write a program that finds the sum of all the numbers in a Tuples using While loop.
16. Write a program that finds sum of all even numbers in a list:
17. Write a program that reverse a list using a loop.
18. Write a program to insert a value in a list at the specified location.
19. Write a program that creates a list of numbers from 1 to 50 that are either divisible by 3 or divisible by 6.

### CHAPTER – 10 PYTHON CLASSES AND OBJECTS

1. What is class? [PTA-1]
2. What is instantiation? (PTA-6, R2-2022)
3. What is the *output* of the following program?  
Class Sample:  
\_\_num=10 def disp(self):  
print(self.\_\_num) S=Sample() S.disp()  
print(S.\_\_num)
4. How will you create constructor in Python?
5. What is the purpose of Destructor? [PTA-2](R2-2022)
6. Write the syntax of class instantiation. [PTA-5]
7. Write the general format of slicing operation. [PTA-6]

### CHAPTER – 11 DATABASE CONCEPTS

1. Mention few examples of a database.
2. List some examples of RDBMS
3. What is data consistency?
4. What is the difference between Hierarchical and Network data model?
5. What is normalization?
6. List the types of database Model. [QY-2019]
7. What are the advantages of DBMS? (GMQ-2021) (PTA-3)





8. What are the shapes to represent database structure in ER model? (or) Describe the database structure. (PTA-2, 6)

### **CHAPTER – 12 STRUCTURED QUERY LANGUAGE**

1. Write a query that selects all students whose age is less than 18 in order wise.
2. Differentiate Unique and Primary Key constraint: (PTA-6, APR-2022)
3. Write the difference between table constraint and column constraint?
4. Which component of SQL lets insert values in tables and which lets to create a table?
5. What is the difference between SQL and My SQL? (PTA-5)
6. Categories of SQL Commands.( A P R - 2020)
7. Define primary key constraint. (QY-2019)
8. Write any three DDL command?(PTA-1)
9. Write a Python code to create a database in SQLite. (PTA-3)
10. What are DCL commands in SQL? (PTA-4)

### **CHAPTER – 13 ( PYTHON AND CSV FILES )**

1. What is CSV File? (PTA-3, APR-2022)
2. Mention the two ways to read a CSV file using Python. (PTA-2)
3. Mention the default modes of the File.
4. What is use of next () function?
5. How will you sort more than one column from a csv file?
6. What is Excel? [PTA-6]
7. How the CSV file operation takes place in python? (or) What are the steps involved in file operation of Python? [GMQ-2019]

### **CHAPTER – 14 IMPORTING C++ PROGRAMS IN PYTHON**

1. What is the theoretical difference between Scripting language and other programming language?
2. Differentiate compiler and interpreter. (GMQ-2019)
3. Write the expansion of 1.SWIG 2.MinGW (APR-2020, PTA-1,5)
4. What is the use of modules?
5. What is the use of cd command. Give an example.
6. Write the syntax of getopt.getopt method. (APR 2022)
7. Differentiate PYTHON and C++. (GM-2021)

### **CHAPTER – 15 (DATA MANIPULATION THROUGH SQL)**

1. Mention the users who uses the Database:
2. Which method is used to connect a database? Give an example
3. What is the advantage of declaring a column as “INTEGER PRIMARY KEY”? (APR 2020)
4. Write the command to populate record in a table. Give an example:
5. Which method is used to fetch all rows from the database table?
6. List the classes used in the SQL SELECT statement.
7. What is SQLite? What are its advantages?

### **CHAPTER – 16 DATA VISUALIZATION USING PYPLOT: LINE , PIE AND BAR CHAT**

1. Define: Data Visualization (HY-2019, APR 2022)
2. List the general types of data visualization.(APR - 2020)
3. List the types of Visualizations in Mat plot lib.



4. How will you install matplotlib?
5. Write the difference between the following functions.  
plt.plot([1,2,3,4]), plt. plot([1,2,3,4],[1,4,9,16])
6. Write any two differences between Histogram and bar graph.
7. What is Matplotlib? (PTA-2)
8. Draw the chart for the given Python snippet. (PTA-4)  
import matplotlib.pyplot as plt  
plt.plot([1, 2, 3, 4], [1, 4, 9, 16])  
plt.show() Program :  
import matplotlib.pyplot as plt plt.plot([1,2,3,4])  
plt.show()
9. What is Pip? (PTA-6)

## CHPATER WISE - 3MARKS

### CHAPTER - 1 FUNCTION

1. Mention the characteristics of Interface.
2. Why strlen is called pure function?
3. What is the side effect of impure function? Give example (PTA5)
4. Differentiate pure and impure function : (APR - 2020, PTA 3,6)
5. What happens if you modify a variable outside the function?
6. Write algorithmic function to find the minimum among 3 numbers. (or)  
Write a function that find the minimum of its 3 arguments.  
(PTA4, QY2019)
7. Write algorithmic recursive function definition to find the sum of n natural numbers.
8. Answer to the following questions with the help of the function given below:  
let rec pow (a: int) (b: int) : int :=  
  if b=0 then 1  
  else  
    a \* pow a (b-1)  
a) What is the name assigned to this function?  
b) What are the parameters defined to this function?  
c) What type of function is this?
9. Identify in the following program :  
let sum x+y:  
  return x+y  
a) Write the name of the function.  
b) Statement which terminates the function.  
c) Name of the argument variable.

### CHAPTER - 2 ( DATA ABSTRACTION )

1. Differentiate concrete data type and abstract data type.
2. Which strategy is used for program designing? Define that Strategy.  
(GMQ- 2019)
3. Identify Which of the following are constructors and selectors?  
(PTA 5)(R1-2022)  
(a) N1=number( ) (b) accetnum(n1) (c) displaynum(n1) (d) eval(a/b)  
(e) x,y= makeslope (m), makeslope(n) (f) display( )
4. What are the different ways to access the elements of a list? Give example.



5. Identify Which of the following are List, Tuple and class?  
 (a) arr [1, 2, 34] (b) arr (1, 2, 34) (c) student [rno, name, mark]  
 (d) day= ('sun', 'mon', 'tue', 'wed') (e) x= [2, 5, 6.5, [5, 6], 8.2]  
 (f) employee [eno, ename, esal, eaddress]
6. Give an example of Implementing an ADT.
7. Differentiate constructors and selectors with example (GM-2021)

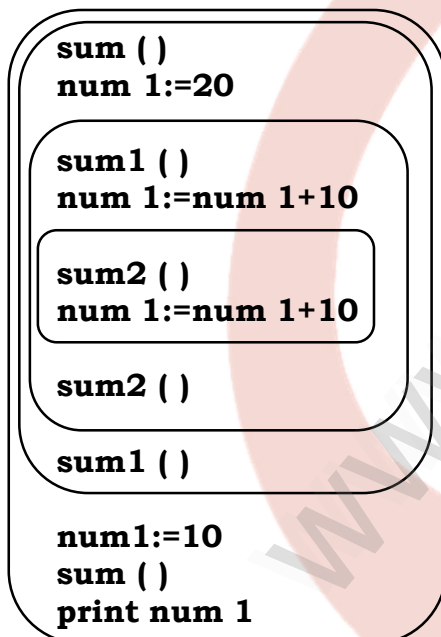
### CHAPTER-3 SCOPING

1. Define Local scope with an example.
2. Define Global scope with an example.(PTA 6)
3. Define Enclosed scope with an example.(PTA 3, R1-2022)
4. Why access control is required? (PTA 1, HY2019)
5. Identify the scope of the variables in the following pseudo code and write its output.  

```

color:= Red
mycolor():
    b:=Blue
myfavcolor():
    g:=Green
    printcolor, b, g
myfavcolor()
printcolor, b
mycolor()
print color

```
6. Observe the following diagram and write the Pseudo code for the following :



### CHAPTER - 4 ALGORITHMIC STRATEGIES

1. List the characteristics of an algorithm. (APR 2022)
2. Discuss about Algorithmic complexity and its types. (PTA 1)
3. What are the factors that influence time and space complexity?
4. Write a note on Asymptotic notation. (APR-2020, QY2019)
5. What do you understand by Dynamic programming.
6. Write the difference between Algorithm and Program. (R1-2022)
7. Write a Pseudo code for linear search (PTA 4, R1-2022)

8. Write a Pseudo code for bubble sort algorithm (PTA 3)
9. What are the different phases of analysis and performance evaluation of an algorithm? (PTA 5)
10. Design an algorithm to find square of the given number and display the result. The algorithm can be written as: (GM-2021)

### CHAPTER – 5 PYTHON - VARIABLES AND OPERATORS

1. Write short notes on Arithmetic operator with examples. (APR - 2022)
2. What are the assignment operators that can be used in Python?
3. Explain Ternary operator with examples : (APR 2020, PTA1, R1-2022)
4. Write short notes on Escape sequences with examples : (R1-2022)
5. What are string literals? Explain.
6. Write an output for the following python program (R1-2022)  

```
x = int (input("Enter Number 1: "))
y = int (input("Enter Number 2: "))
print ("The sum = ", x+y)
```
7. Explain input ( ) function with example. (R1-2022)
8. What are the rules to be followed while creating an identifier in Python? (PTA 2)
9. Differentiate division, modulus and floor division operators of Python  
Assume a=100 and b=10
10. What are keywords in python?
11. Demo Program to test Arithmetic Operators  

```
a=100      b=10
print ("The Sum = ",a+b)
print ("The Difference = ",a-b)
print ("The Product = ",a*b)
print ("The Quotient = ",a/b)
print ("The Remainder = ",a%30)
print ("The Exponent= ",a**2)
print ("The Floor Division =",a//30)
```

### CHAPTER – 6 CONTROL STRUCTURES

1. Write a program to display. (PTA 5, APR-2022)  

```
A
A B
A B C
A B C D
A B C D E
```
2. Write note on if.. else structure.
3. Using if..else..elif statement write a suitable program to display largest of 3 numbers.
4. Write the syntax of while loop. (PTA 4 ,QY 2019, R2-2022)
5. List the differences between break and continue statements. (HY 2019)(2022)
6. Write a program to print the following pattern. (R2-2022)  

```
1
1 2
12 3
```
7. What is the role of range ( ) in for loop of python? (PTA 1)
8. Draw a flow chart to explain in while loop. (PTA 2)
9. Write the syntax of if..elif ..else statement in python. (PTA 3)





10. What will be the output of the following python code?

```
x=20
while(x >= 5):
    print (x, end='\t')
    x- =5
```

6. Write program to check vowel or not. (QY 2019, GM-2021)

7. Write a python program that displays 1 to 10 using While loop

8. What will be the *output* of the following python code?

```
for i in range (2,10,2):
    print (i, end=' ')
```

9. Write a program to calculate the sum of numbers 1 to 100.

10. Which jump statement is used as place holder? (GM-2019)

11. Write a program to print the following pattern: (1<sup>st</sup> 3 mark Qus Model)

```
*****
****
***
**
*
```

12. Write a program to check if the year is leap year or not....

13. Write a program to check if the given number is palindrome or not.

14. Write a program to display sum of natural numbers, Up to n.

```
n=int(input("Enter a number:"))
sum=0
for i in range (i,n+=1):
    sum=sum+i
print("Sum=",sum)
```

## CHAPTER - 7 PYTHON FUNCTIONS

1. Write the rules of local variable. (APR 2022)

2. Write the basic rules for global keyword in python : (PTA 4)

3. What happens when we modify global variable inside the function?

4. Differentiate ceil () and floor() function? (PTA 2)

5. Write a Python code to check whether a given year is leap year or not.

6. What is composition in functions?

7. How recursive function works? (APR 2020)

8. What are the points to be noted while defining a function? (GMQ2019, R2-2022)

9. Write a python program to check and print if the given number is odd or even using class.

10. Evaluate the following function. (QY-2019)

a) math.ceil (3.5) b) abs (-3.2) c) pow (2,0)

11. What is the use of format () function? Give an example. (QY-2019)

12. How can you pass parameters in function?

## CHAPTER - 8 STRINGS AND STRING MANIPULATION

1. Write a Python program to display the given pattern. (GM- 2019)

```
COMPUTER
COMPUTE
COMPUT
COMPU
COMP
COM
CO
C
```



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2. Write a short about the followings with suitable example. (PTA1,3)
  - (a) capitalize()    (b) swap case()
3. What will be the output of the given python program?
 

```
str1 = "welcome"
str2 = "to school"
str3=str1[:2]+str2[len(str2)-2:]
print(str3)
```
4. What is the use of format ( )? Give an example. (HY2019)
5. Write a note about count ( ) function in python.
6. Explain any two string operators
7. What will the output of the given python Snippet?
 

```
str1 = "Welcome to learn Python"
1) print (str1[10:16])
2)print (str1[10:16:4])
3)print (str1[10:16:2])
4) print (str1[::3])
```
8. What will the *output* of the given python Snippet? (APR 2020)
 

```
str1="Welcome to Python"
1)print(str1)
2)print(str 1[11:17] )
3)print(str1[11:17:2] )
4)print(str1[: : 4] )
5)print(str1[: : - 4] )
```
4. What will the *output* of the given python Snippet? (GM-2021)
 

```
str1= "Welcome to public examination"
1)print (str1[:-13: -1])
2)print (str1[11:17])
3)print (str1[:8]+python)
```
5. What is the use of the operator += in python string operation. (Or) Write a short note on string slicing with syntax and example. (GMQ2019, PTA-3)
6. What will be output of the following python program?
 

```
str1 = "welcome"
str2 = "to school"
str3 = str1[:3]+str2[len(str2)-1:]
print(str3)
```
7. What will be output of the following python program?
 

```
str1 = "welcome"
str2 = "to python programming"
str3 = str1[:2]+str2[len(str2)-2:]
print(str3)
```
8. Write a program to create a mirror of the given string. Ex:"wel"="lew".
9. write program to display the following pattern
 

```
*
**
***
****
*****
```
- 10 How index value allocated to each character of a string in Python? (PTA-5)
- 11 Explain about slicing and slicing with stride. (PTA-6)



12 Write the *output* for the following program. (QY-2019)

```
str="COMPUTER" index=len(str)
for i in str:
    print(str[0:index-7])
    index+=1
```

### CHAPTER - 9 LISTS, TUPLES, SETS AND DICTIONARY

1. What are the advantages of Tuples over a list? (R2-2022)
2. Write a short note about sort( )
3. What will be the *output* of the following code? (R2-2022)  
list = [2\*\*x for x in range(5)]  
print(list)
4. Explain the difference between del and clear( ) in dictionary with an example.
5. List out the set operations supported by python.
6. What are the difference between List and Dictionary?(HY2019,PTA 3)
7. What is nested Tuples? Give suitable example. (R2-2022)
8. What will be the *output* of the following code? (APR 2020)  
list = [3\*\*x for x in range(5)]  
print(list)
9. What is the *output* of the following program?  
Dict= {x:2\*x for x in range (1,10) }
10. Write the *Output*:  
>>> num=[ i\*\*2 for i in range(1,11) ]  
>>>print(num)
11. What will be the output of the following python program?(PTA-2)  
A={x\*3 for x in range (1,6)}  
B={y\*\*2 for y in range (1,10,2)}  
Print(A)  
Print(B)  
Print(A | B)  
print(A-B)  
print(A&B)  
print(A^B)
12. Write a program to create a list of numbers in the range 1 to 20. Then delete all the numbers from the list that are divisible by 3.
13. Write a program that counts the number of times a value appears in the list. Use a loop to do the same.
14. Write a program to swap two values using tuple assignment
15. Write a program using a function that returns the area and circumference of a circle whose radius is passed as an argument. Two values using tuple assignment.
16. Write a program that has a list of positive and negative numbers. Create a new tuple that has only positive numbers from the list.
17. What is reverse using indexing list?
18. Write a short note on pop ( ) function in Python.
19. Explain list and Tuples.
20. Write short note on (i) Remove (ii) clear.
21. Write short note on Sort ( ) function with suitable examples (GM-2021)
22. Write execution table for the following Python code. (PTA-1)
23. Write a simple python program with list of five marks and print the sum of all the marks using while loop. (PTA-5)



## CHAPTER – 10 PYTHON CLASSES AND OBJECTS

1. What are class members? How do you define it? (PTA-1)
2. Write a class with two private class variables and print the sum using a method. (PTA-2)
3. Find the error in the following program to get the given *output*?

Error code :

```
class Fruits:
def __init__(self, f1, f2):
    self.f1=f1 self.f2=f2
def display(self):
    print("Fruit 1 = %s, Fruit 2 = %s" %(self.f1, self.f2))
F = Fruits ('Apple', 'Mango')
del F.display
F.display()
```

Output :

Fruit 1 = Apple, Fruit 2 = Mango

4. What is the output of the following program?
 

```
class Greeting:
def __init__(self, name): self.__name = name
def display(self):
print("Good Morning ", self.__name)
obj=Greeting('Bindu Madhavan') obj.display()
```
5. How do define constructor and destructor in Python?(PTA-4)
6. What will be the output of the following program? (R2-2022)
 

```
class Student:
mark1, mark2, mark3 = 45, 91, 71
def process(self):
    sum = Student.mark1 + Student.mark2 + Student.mark3
    avg = sum/3
    print("Total Marks = ", sum)
    print("Average Marks = ", avg) return
S=Student()
S.process()
```
7. What is Public and Private data member in Python? [PTA-3](R2-2022)
8. What is the *output* of the following program? (2020)
 

```
class Greeting:
def __init__(self, name):
self.__name = name def display(self):
print("Welcome to ", self.__name)
obj=Greeting('Python Programming')
obj.display()
```
9. What is the *output* of the following program? (GMQ-2019)
 

```
class Greeting:
def __init__(self, name):
    self.__name = name
def display(self):
    print("Good Morning", self.__name)
obj=Greeting('Tamil Nadu')
obj.display()
```
10. What is Constructor? (QY-2019)





11. Write a Python program to check and print if the given number is odd or even using class. (HY-2019)

### **CHAPTER – 11 DATABASE CONCEPTS**

1. What is the difference between Select and Project command?(PTA-2, QY-2019)
2. What is the role of DBA?
3. Explain Cartesian Product with a suitable example.(GMQ-2019,PTA-5)
4. Explain Object Model with example. (QY-2019)
5. Write a note on different types of DBMS users.
6. What are the components of DBMS?
7. Differentiate between data and information
8. Write a short note on Unary Relational Operations of DBMS. (PTA-4)

### **CHAPTER – 12 STRUCTURED QUERY LANGUAGE**

1. What is a constraint? Write short note on Primary key constraint. (HY-2019)
2. Write a SQL statement to modify the student table structure by adding a new field.
3. Write any three DDL commands. (PTA-2)
4. Write the use of Save point command with an example.
5. Write a SQL statement using DISTINCT keyword: (APR 2022)
6. Write short notes on TCL commands in SQL (APR 2020, GM-2021)
7. Compare Delete, Truncate and Drop in SQL. (or) (PTA-1, 3)  
What is the use of DELETE, TRUNCATE and DROP commands in SQL?

### **CHAPTER – 13 PYTHON AND CSV FILES**

1. Write a note on open () function of python. [PTA-1;HY-2019] What is the difference between the two methods?
2. Write a Python program to modify an existing file.
3. Write a Python program to read a CSV file with default delimiter comma (,)
4. What is the difference between the write mode and append mode.(PTA-2,5)
5. What is the difference between reader () method and DictReader() class? (APR 2020)
6. Write about CSV files?
7. How csv.write() function is used to create a normal CSV file in Python? (PTA-4)

### **CHAPTER – 14 IMPORTING C++ PROGRAMS IN PYTHON**

1. Differentiate PYTHON and C++.(HY-2019)
2. What are the applications of scripting language? (PTA-4)
3. What is MinGW? What is its use?
4. Identify the module ,operator, definition name for the following .(PTA-6)  
Welcome . display()
5. What is sys.argv? What does it contain?(APR 2022)
6. Write about MinGW Interface.



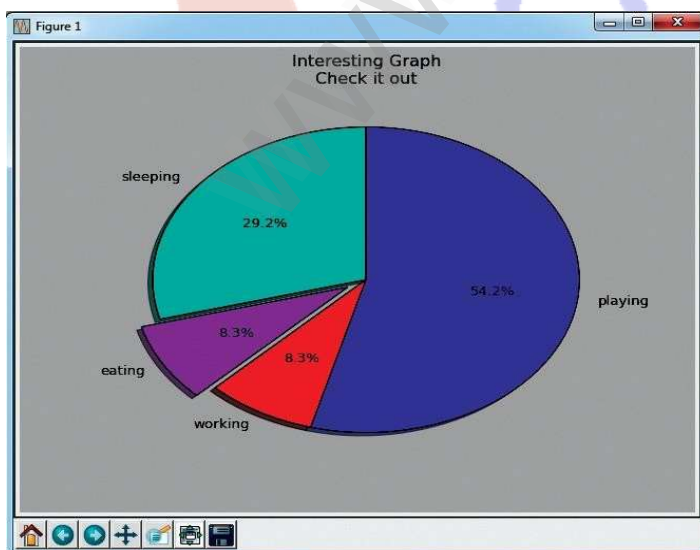
## CHAPTER – 15 DATA MANIPULATION THROUGH SQL

1. What is SQLite? What is its advantage? (PTA-1, HY-2019)
2. Mention the difference between fetch one() and fetch many() (APR 2020), PTA-4)
3. What is the use of Where clause. Give a python statement Using the where Clause.(GM-2019)
4. Read the following details. Based on that write a python script to display department wise record. (PTA-5,6)  
 Database name :- organization.db  
 Table name:- Employee  
 Columns in the table :- Eno, EmpName, Esal, Dept
5. Read the following details. Based on that write a python script to display records in descending order of Eno  
 database name :- organization.db  
 Table name:- Employee  
 Columns in the table :- Eno, EmpName, Esal, Dept
6. Write a short note on (GM-2019)  
 (i) fetchall() (ii) fetchone() (iii) fetchmany

## CHAPTER – 16 DATA VISUALIZATION USING PYPLOT: LINE , PIE AND BAR CHAT

1. Draw the output for the following data visualization plot. [GMQ-2019]  

```
import matplotlib.pyplot as plt
plt.bar([1,3,5,7,9],[5,2,7,8,2], label="Example one")
plt.bar([2,4,6,8,10],[8,6,2,5,6], label="Example two", color='g')
plt.legend()
plt.xlabel('bar number')
plt.ylabel('bar height')
plt.title('Epic Graph\nAnother Line! Whoa')
plt.show()
```
2. Write any three uses of data visualization. (PTA-1;HY-2019, APR 2022)
3. Write the coding for the following:  
 To check if PIP is installed in your PC.  
 To Check the version of PIP installed in your PC.  
 To list the packages in matplotlib.
4. Write the plot for the following pie chart *output*:



5. What will be the output of the following python code?  

```
import matplotlib.pyplot as plt
plt.plot([1,2,3,4], [1,4,9,16])
plt.show( )
```
6. Define data visualization. Mention its types and uses. (GM-2021)
7. What is pie chart? How will you create pie chart in Python? Give an example. (PTA-3)

## CHPATER WISE – 5MARKS

### CHAPTER – 1 FUNCTION

1. What are called Parameters and write a note on (PTA 2, R1-2022, APR-2022)  
 (i) Parameter without Type (ii) Parameter with Type
2. Identify in the following program (PTA5) let rec gcd a b :=  

```
if b < > 0 then
gcd b (a mod b)
else
return a
```

  - i. Name of the function.
  - ii. Identify the statement which tells it is a recursive function.
  - iii. Name of the argument variable.
  - iv. Statement which invoke the function recursively.
  - v. Statement which terminates the recursion.
3. Explain with example Pure and impure functions.
4. Explain with an example interface and implementation.

### CHAPTER – 2 DATA ABSTRACTION

1. How will you facilitate data abstraction. Explain it with suitable example. (R1-2022)
2. What is a List? Why List can be called as Pairs. Explain with suitable example. (PTA 6)
3. How will you access the multi-item. Explain with example.

### CHAPTER-3 SCOPING

1. Explain the types of scopes for variable or LEGB rule with example... (PTA 1)
2. Write Five Characteristics of Modules. (PTA 4,6, HY 2019)
3. Write any five benefits in using modular programming. (GMQ 2019)
4. Why scope should be used for variable? Explain Global scope with an example. (R1-2022)

### CHAPTER – 4 ALGORITHMIC STRATEGIES

1. Explain the characteristics of an algorithm. (PTA5, HY 2019) (R1-2022)
2. Discuss about Linear search algorithm. (2020) (PTA 1)
3. What is Binary search? Discuss with example. (R1-2022)
4. Explain the Bubble sort algorithm with example. (PTA 6, APR-2022)
5. Explain the concept of Dynamic programming with suitable example.
6. Explain the Insertion Sort algorithm with example. (R1-2022)
7. Explain the Selection sort algorithm. (PTA 4, QY 2019)



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8. Explain about Complexity of an algorithm. (PTA 3)

### CHAPTER – 5 PYTHON - VARIABLES AND OPERATORS

- Describe in detail the procedure Script mode programming.
- Explain input () and print () functions with examples. (GMQ2019, PTA 3), APR 2020, 2022)
- Discuss in detail about Tokens in Python. (PTA-3 , QY 2019, R1-2022)
- Write an Output for the following python program (R1-2022)  

```
a=100      b=10
print ("The Sum = ",a+b)
print ("The Difference = ",a-b)
print ("The Product = ",a*b)
print ("The Quotient = ",a/b)
print ("The Remainder = ",a%30)
print ("The Exponent = ",a**2)
print ("The Floor Division =",a//30)
```
- Write a note on : i ) Comments ii ) Indentation (R1-2022)
- Explain Operators in Python. (PTA 1, HY2019, R1-2022)

### CHAPTER – 6 CONTROL STRUCTURES

- Write a detail note on for loop. (GMQ2019, R2-2022, APR-2022)
- Write a detail note on if..else..elif statement with suitable example. (HY-2019)
- Write a program to display all 3 digit odd numbers.
- Write a program to display multiplication table for a given number.
- Write a program to check if a number is positive, Negative or Zero. (R2-2022)
- Write program to check vowel or not... (QY-2019)
- Write a loop on while loop.
- Write a Fibonacci series while loop.
- Write a python program to display all 3 digit even numbers.  
Using for loop : (APR -2020)
- Write the output for the following program  

```
1
1 2
1 2 3
1 2 3 4
1 2 3 4 5
```
- Explain briefly about Jump statement in python (PTA 1,3)
- What are the different types of Loops in Python? Explain within example.(PTA 3,4)

### CHAPTER – 7 PYTHON FUNCTIONS

- Explain the different types of function with an example. (GM-2019, PTA-4)
- Explain the scope of variables with an example. (HY-2019, PTA 3, R2-2022)
- Explain the following built-in functions. (APR 2020, HY-2019, PTA 4,6)  
(a) id() (b) chr() (c) round() (d) type() (e) pow()
- Write a Python code to find the L.C.M. of two numbers.





5. Explain recursive function with an example. (PTA 5)
6. Explain the functions of return statement with syntax and example. (R2-2022)
3. How to define a class in python? Explain with example. (R2-2022)
4. Explain public and private data members with examples. (R2-2022)
5. How to define Constructor and destructor in python. (2020)
6. How will you create the class and objects in python.

### CHAPTER – 11 DATABASE CONCEPTS

1. Explain the different types of data model. (HY-2019)
2. Explain the different types of relationship mapping. (PTA-1,4)
3. Differentiate DBMS and RDBMS.(APR 2020)
4. Explain the different operators in Relational algebra with suitable examples.
5. Explain the characteristics of DBMS.[PTA,3,5]
6. Components of DBMS.

### CHAPTER – 12 STRUCTURED QUERY LANGUAGE

1. Write the different types of constraints and their functions. [PTA-3]
2. Consider the following employee table. Write SQL commands for the Questions: (i) to (v). [PTA-2]

EMP CODE	NAME	DESIG	PAY	ALLOWANCE
S1001	Hariharan	Supervisor	29000	12000
P1002	Shaji	Operator	10000	5500
P1003	Prasad	Operator	12000	6500
C1004	Manjima	Clerk	8000	4500
M1005	Ratheesh	Mechanic	20000	7000

- i. To display the details of all employees in descending order of pay.
  - ii. To display all employees whose allowance is between 5000 and 7000.
  - iii. To remove the employees who are mechanic.
  - iv. To add a new row.
  - v. To display the details of all employees who are operators.
3. What are the components of SQL? Write the commands in each. (GM-2019)
  4. Construct the following SQL statements in the student table (APR-2022)
  5. Write a SQL statement to create a table for employee having any five fields and create a table constraint for the employee table. (APR 2020)
  6. Consider the following employee table. Write SQL commands for the Questions.(i) to(v). [HY-2019]

Roll No	Name	Group	Roll No	Name	Group
1001	velu	A1	1006	Rahul	B1
1002	chozhan	A2	1007	Karthick	A1
1003	kayman	B1	1008	Manoj	A2
1004	Ram	A1	1009	Pazhani	B1
1005	Asraf	A2			

- i. To display the details of all students in ascending order of name:
- ii. To display all students in A2 group:
- iii. To display the details group wise:
- iv. To add new row
- v. To remove students who are in B1 group:



### CHAPTER – 13 PYTHON AND CSV FILES

1. Differentiate Excel file and CSV file. (PTA-2, APR 2022)
2. Tabulate the different mode with its meaning.
3. Write the different methods to read a File in Python.
4. Write a Python program to write a CSV File with custom quotes.
5. Write the rules to be followed to format the data in a CSV file. (PTA-5)

### CHAPTER – 14 IMPORTING C++ PROGRAMS IN PYTHON

1. Write any 5 features of Python. (APR 2020, PTA-3)
2. Explain each word of the following command. (APR 2022)  
 Python <filename.py> -<i> <C++ filename without cpp extension>
3. What is the purpose of sys,os,getopt module in Python. Explain.
4. Write the syntax for getopt() and explain its arguments and return values  
 Syntax. (PTA-2,5)
5. Write a Python program to execute the following c++ coding.

### CHAPTER – 15 DATA MANIPULATION THROUGH SQL

1. Write in brief about SQLite and the steps used to use it.
2. Write the Python script to display all the records of the following table using fetchmany()

Icode	Item Name	Rate
1003	Scanner	10500
1004	Speaker	3000
1005	Printer	8000
1008	Monitor	15000
1010	Mouse	700

3. What is the use of HAVING clause? Give an example python script. [PTA-5]
4. Write a Python script to create a table called ITEM with following specification. Add one record to the table.  
 Name of the database :- ABC  
 Name of the table :- Item Column name and specification

Icode	:-	integer and act as primary key
Item Name	:-	Character with length 25
Rate	:-	Integer
Record to be added	:-	1008, Monitor,15000

5. Consider the following table Supplier and item.  
 Write a python script for (i) to (ii)

SUPPLIER				
Suppno	Name	City	Icode	SuppQty
S001	Prasad	Delhi	1008	100
S002	Anu	Bangalore	1010	200
S003	Shahid	Bangalore	1008	175
S004	Akila	Hydrabad	1005	195
S005	Girish	Hydrabad	1003	25
S006	Shylaja	Chennai	1008	180
S007	Lavanya	Mumbai	1005	325



- i. Display Name, City and Itemname of suppliers who do not reside in Delhi.
  - ii. Increment the SuppQty of Akila by 40.
6. Write the Python script to display all the records of the following table using fetch many() (PTA-1)

Reg.No	Name	Marks
3001	Chithirai	353
3002	Vaigasi	411
3003	Aani	374
3004	Aadi	289
3005	Aavani	507
3006	Purattasi	521

7. Write a note on aggregate functions of SQL. (PTA-6)

### **CHAPTER – 16 DATA VISUALIZATION USING PYPLOT: LINE , PIE AND BAR CHAT**

1. Explain in detail the types of pyplots using matplotlib. (PTA-6)
2. Explain the various buttons in a matplotlib window. (PTA-5)
3. Explain the purpose of the following functions. (APR 2022)
  - a. plt.xlabel
  - b. plt.ylabel
  - c. plt.title
  - d. plt.legend()
  - e. plt.show()
4. What are the key differences between Histogram and Bar graph? (PTA-4)
5. Draw the output of the following python code. (PTA-3)

```
import matplotlib.pyplot as plt
x = [1,2,3]
y = [5,7,4]
x2 = [1,2,3]
y2 = [10,14,12]
plt.plot(x, y, label='Line 1')
plt.plot(x2, y2, label='Line 2')
plt.xlabel('X-Axis') plt.ylabel('Y-Axis')
plt.title('LINE GRAPH')
plt.legend()
plt.show()
```

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