

# COMPUTER SCIENCE

## QUESTION MATERIAL

### BOOK BACK & PUBLIC

## XII - STANDARD

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**CHAPTER 1 TO 16 [ 2 , 3 & 5 MARK ] BOOK BACK & PUBLIC QUESTIONS**

<b>CHAPTER 1 TO 16 TWO MARK BOOK BACK &amp; PUBLIC QUESTIONS</b>	
	<b>CHAPTER – 1 ( FUNCTION )</b>
1.	What is a subroutine?
2.	Define Function with respect to Programming language. (S-2021)
3.	Write the inference you get from X:=(78).
4.	Differentiate interface and implementation (J-2023)
5.	Which of the following is a normal function definition and which is recursive function definition i) let sum x y: return x + y ii) let disp : print 'welcome' iii) let rec sum num: if (num!=0) then return num + sum (num-1) else return num
1.	List the characteristics of Interface: (S-2020)
	<b>CHAPTER – 2 ( DATA ABSTRACTION )</b>
1.	What is abstract data type? (M-2022, M-2024)
2.	Differentiate constructors and selectors. (J-2022, J-2024)
3.	What is a Pair? Give an example. (M-2020, J-2023)
4.	What is a List? Give an example.
5.	What is a Tuple? Give an example. (M-2023)
	<b>(CHAPTER-3) (SCOPING )</b>
1.	What is a scope? (M-2023)
2.	Why scope should be used for variable. State the reason.
3.	What is Mapping? (M-2022)
4.	What do you mean by Namespaces? (M-2020, J-2022, J-2024)
5.	How Python represents the private and protected Access specifies?
1.	What are the characteristics of modules? (S-2020)
	<b>CHAPTER – 4 ( ALGORITHMIC STRATEGIES )</b>
1.	What is an Algorithm? (M-2020)
2.	Write the phases of performance evaluation of an algorithm.
3.	What is Insertion sort?
4.	What is Sorting?
5.	What is searching? Write its types. (M-2022, M-2024)
	<b>CHAPTER – 5 ( PYTHON - VARIABLES AND OPERATORS )</b>
1.	What are the different modes that can be used to test Python Program? (S-2021, M-2022)
2.	Write short notes on Tokens. (S-2020, J-2023)
3.	What are the different operators that can be used in Python? (M-2024)
4.	What is a literal? Explain the types of literals? (J-2024)
5.	Write short notes on Exponent data?
	<b>CHAPTER – 6 ( CONTROL STRUCTURES )</b>
1.	List the control structures in Python. (J-2023)
2.	Write note on break statement. (S-2021, J-2024)
3.	Write is the syntax of if.. else statement.
4.	Define control structure.
5.	Write note on range () in loop. (M-2020, J-2022, M-2023)
	<b>CHAPTER – 7 ( PYTHON FUNCTIONS )</b>
1.	What is function?
2.	Write the different types of function. (S-2021, M-2024)
3.	What are the main advantages of function? (J-2023)
4.	What is meant by scope of variable? Mention its types. (J-2022)
5.	Define global scope.
6.	What is base condition in recursive function?
7.	How to set the limit for recursive function? Give an example.
	<b>CHAPTER – 8 ( STRINGS AND STRING MANIPULATION )</b>
1.	What is String? (S-2021, J-2024)
2.	Do you modify a string in Python?
3.	How will you delete a string in Python? (M-2023)
4.	What will be the output of the following python code? str1 = "School" print(str1*3) (J-2022)
5.	What is slicing?
1.	What is the use of replace () in python? Write the general format of replace () (S-2020)

2.	What will be the output of the given python str= "COMPUTER SCIENCE" (M-2020) a) print(str*2)      b) print (str[0:7] )
<b>CHAPTER – 9 ( LISTS, TUPLES, SETS AND DICTIONARY)</b>	
1.	What is List in Python? (S-2021)
2.	How will you access the list elements in reverse order?
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.
5.	Write the syntax of creating a Tuple with n number of elements. (M-2022)
6.	What is set in Python? (J-2022, J-2023)
1.	Write the syntax to create a list with suitable example. (S-2020)
2.	What will be output of the python code? Squares = [x**2 for x in range (1,11)] print (Squares) (M-2023)
3.	Write the use of pop ( ) function in Python. (M-2024)
<b>CHAPTER – 10 ( PYTHON CLASSES AND OBJECTS )</b>	
1.	What is class? (M-2023, J-2024)
2.	What is instantiation?
3.	What is the output of the following program? Class Sample: >>> __num=10 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?
<b>CHAPTER – 11( DATABASE CONCEPTS )</b>	
1.	Mention few examples of a database. (J-2022)
2.	List some examples of RDBMS.
3.	What is data consistency? (J-2023)
4.	What is the difference between Hierarchical and Network data model? (M-2024)
5.	What is normalization?
1.	Write advantages of DBMS? (S-2020)(S-2021)
<b>CHAPTER – 12 ( STRUCTURED QUERY LANGUAGE )</b>	
1.	Write a query that selects all students whose age is less than 18 in order wise.
2.	Differentiate Unique and Primary Key constraint. (M-2022, J-2024)
3.	Write the difference between table constraint and column constraint? (J-2023)
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 MySQL?
1.	What is Data Manipulation language? (M-2020)
2.	Write categories of SQL Commands: (M-2020)
<b>CHAPTER – 13 ( PYTHON AND CSV FILES )</b>	
1.	What is CSV File? (S-2021, M-2022, M-2024)
2.	Mention the two ways to read a CSV file using Python. (S-2020)
3.	Mention the default modes of the File. (M-2023)
4.	What is use of next ( ) function? (J-2024)
5.	How will you sort more than one column from a CSV file? Give an example statement.
<b>CHAPTER – 14 ( IMPORTING C++ PROGRAMS IN PYTHON )</b>	
1.	What is the theoretical difference between Scripting language and other programming language? (S-2021)
2.	Differentiate compiler and interpreter. (J-2022)
3.	Write the expansion of 1.SWIG 2.MinGW (M-2020)
4.	What is the use of modules?
5.	What is the use of cd command? Give an example.
1.	Write the syntax of getopt.getopt method (M-2022)
<b>CHAPTER – 15 (DATA MANIPULATION THROUGH SQL)</b>	
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"? (M-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? (J-2022, M-2024)
1.	Write notes on MAX ( ) and MIN ( ) (J-2023)
<b>CHAPTER – 16 ( DATA VISUALIZATION USING PYPLOT: LINE , PIE AND BAR CHAT )</b>	
1.	What is Data Visualization? (M-2022)
2.	List the general types of data visualization. (M-2020, M-2023, J-2024)
3.	List the types of Visualizations in Mat plot lib. (S-2020, M-2024)   4. How will you install Mat plot lib?

5.	Write the difference between the following functions. plt.plot([1,2,3,4]), plt. plot([1,2,3,4],[1,4,9,16])		
<b>CHAPTER 1 TO 16 BOOK INSIDE TWO MARKS QUESTIONS</b>			
<b>CHAPTER – 1 ( FUNCTION )</b>			
1.	Give one example of pure function.	6.	Write syntax for function definitions.
2.	What are called function?	7.	Write syntax for function types.
3.	What is Definitions?	8.	Static compare dynamic function:
4.	Differentiate Parameters and Arguments.	9.	Define pure function. Give one example
5.	What is recursive function?	10.	Define Impure function. Give one example. .
<b>CHAPTER – 2 ( DATA ABSTRACTION )</b>			
1.	What is modularity?	5.	What is selector?
2.	What is abstraction?	6.	What is wishful thinking?
3.	What different ways is implemented?	7.	What are the types of elements of list?
4.	What is constructor?		
<b>(CHAPTER-3) ( SCOPING )</b>			
1.	What are Modules?	7.	What is access control?
2.	What is LEGB rule?	8.	What is data encapsulation?
3.	Write the types of scopes of variable.	9.	What is public members?
4.	What is modular programming?	10.	What is private members?
5.	Give some examples of modules.	11.	What is protected members?
6.	What is module scope?		
<b>CHAPTER – 4 ( ALGORITHMIC STRATEGIES )</b>			
1.	What is algorithmic solution?	9.	What is binary search?
2.	What is algorithmic strategy?	10.	What is bubble sort?
3.	Give some examples of data structures?	11.	What is selection sort?
4.	What is algorithm analysis?	12.	What is Insertion sort?
5.	What is Time factor?	13.	What is Dynamic programming?
6.	What is space factor?	14.	What is Memorization?
7.	What is Space-Time trade off?	15.	What is used for Omega?
8.	What is linear search?		
<b>CHAPTER – 5 ( PYTHON - VARIABLES AND OPERATORS )</b>			
1.	What are keywords in python?	1.	Write a command to execute the python script.
2.	What are the key features of python?	2.	What is keyword? Give examples.
3.	Define Operator and Operand.	6.	Write a short notes on floor division operator.
7.	Write about input statements in python (or) Input function in python		
8.	Why the python interpreter does not read the lines which begins with (#) hash symbol? Justify your answer.		
9.	Invoking Python IDLE.	14.	What are called comments?
10.	What is interactive mode?	15.	What is indentation?
11.	What is script mode?	16.	What is Delimiters?
12.	What is input function?	17.	Give few examples of Build-in or fundamental data types.
13.	What is output function?	18.	Explain the data types.
<b>CHAPTER – 6 ( CONTROL STRUCTURES )</b>			
1.	What will be the output of the following snippet? alpha=list(range(65,70 for x in alpha: print(chr(x),end='\t') End of the loop		
2.	What are the types of loop?	10.	What is While loop?
3.	Write python program to print 1 12 123 1234 12345	11.	What is for loop?
4.	What is control structure or statement?	12.	What is nested loop structure?
5.	What is sequential statement?	13.	What is indentation?
6.	What is if-statement?	14.	What is Jump statement? Write it types.
7.	What is if-else statement?	15.	What is break statement?
8.	What is Nested if..elif...else statement?	16.	What is continue statement?
9.	What is Loop?	17.	What is Pass statement?
<b>CHAPTER – 7 ( PYTHON FUNCTIONS )</b>			
1.	Write the syntax of creating user defined function	8.	What are the types of arguments?
2.	What is the use of lambda or anonymous function?	9.	What is Required arguments?
3.	Describe the abs ( ) and chr ( ) function.	10.	What is Keyword arguments?
4.	Define Short note on floor division operator.	11.	What is Default arguments?

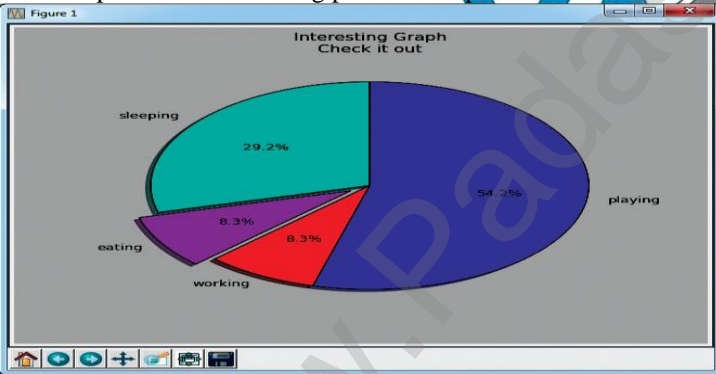
5.	Advantages of User-defined Functions.	12.	What is variable-length arguments?
6.	What is Block?	13.	Types of variable length argument passing methods.
7.	What is Nested Block?	14.	What is anonymous function?
<b>CHAPTER – 8 ( STRINGS AND STRING MANIPULATION )</b>			
1.	What will be the output of the following Python code? Str1 = “Madurai” print(Str1*3)		
2.	What are membership operators in Python?		
3.	What will be the output of the following Python snippet? str1=“THOLKAPPIYAM” 1) print(str1[4:]) 2) print(str1[4::2]) 3) print(str1[::3]) 4) print(str1[: -3])		
4.	What is the positive and negative subscript value of the character ‘h’ in string ‘school’?		
5.	What will be the output of the following Python Code? str=“Chennai” print(str*4)		
6.	Explain the following function: lower()		
7.	Write about the following python string functions i) islower() ii) title ()		
8.	Write the general format of slicing operation.		
9.	What is the use of replace ( ) in python? Write the general format of replace ( )		
10.	How to access the characters in string?		
11.	What is the use of operator += in python		
<b>CHAPTER – 9 ( LISTS, TUPLES, SETS AND DICTIONARY )</b>			
1.	Write the syntax of creating dictionary in Python.		
2.	What will be output of the following snippet? Mydict={chr(x):x for x in range(97,102)} Print (Mydict)		
3.	What will be output of the following snippet? Set_A = {'A',2,4,'D'} Set_B={'A','B','C','D'}Print (Set_A&Set_B)		
4.	Collection data types available in Python.	12.	Append () function.
5.	Write the syntax to create a list with suitable example	13.	Extend () function.
6.	Write note about tuple Assignment.	14.	Insert function.
7.	What is list comprehensions?	15.	Delete statement.
8.	What is singleton tuple?	16.	Remove function.
9.	What are called Nested list? With example.	17.	POP ()function.
10.	Len () function.	18.	Clear () function.
11.	For loop.	19.	Range () function.
<b>CHAPTER – 10 ( PYTHON CLASSES AND OBJECTS )</b>			
1.	Write the syntax of class instantiation.	3.	What are called constructor and destructor?
2.	What are called class variable & methods?		
<b>CHAPTER – 11 ( DATABASE CONCEPTS )</b>			
1.	What are the advantages of RDBMS?	5.	What is Data Manipulation language?
2.	Examples of DBMS & RDBMS:	6.	Define database?
3.	Describe the database structure.	7.	What is data base?
4.	List the types of database Model.		
<b>CHAPTER – 12 ( STRUCTURED QUERY LANGUAGE )</b>			
1.	List any four DDL commands.	9.	Give one examples of DELETE command.
2.	Write a Python code to create a database in SQLite.	10	Give one examples of UPDATE command.
3.	What are DCL commands in SQL?	11	Give one examples of SELECT command.
4.	Define primary key constraint.	12	What are the types of DML?
5.	Write categories of SQL Commands	13	What is Table?
6.	Write any three DDL command?	14	What is a field?
7.	Give one examples of CREATE TABLE command.	15	What is record?
8.	Give one examples of INSERT command.	16	“BETWEEN” and “NOT BETWEEN” keywords.
<b>CHAPTER – 13 ( PYTHON AND CSV FILES )</b>			
1.	What is Excel?	4.	What is the use of skip initial space?
2.	How the CSV file operation takes place in python?	5.	How to create and save a extension of csv file?
3.	What is line terminator?	6.	List out writing data into different types in CSV file
<b>CHAPTER – 14 ( IMPORTING C++ PROGRAMS IN PYTHON )</b>			
1.	Write the syntax of getopt. getopt method.	5.	What is garbage collection?
2.	Write the syntax of python OS module.	6.	List out importing c++ files in python interfaces
3.	Differentiate PYTHON and C++	7.	Define Static typed language.
4.	What is scripting language with examples?	8.	Define Dynamic typed language.
<b>CHAPTER – 15 ( DATA MANIPULATION THROUGH SQL )</b>			

1.	List the classes used in the SQL SELECT statement.	5.	What is sqlite_master?
2.	What is SQLite? What are its advantages?	6.	What is Cursor?
3.	Explain 1) cursor.fetchall() 2) cursor.fetchone() 3) cursor.fetchmany()		
4.	Which clause used for AND, OR, NOT operators?		
<b>CHAPTER – 16 ( DATA VISUALIZATION USING PYPLOT: LINE , PIE AND BAR CHAT )</b>			
1.	What is Matplotlib?		
2.	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()		
3.	What is Pip?		
4.	Write any two differences between Histogram and bar graph.		
5.	What is info graphics?		
6.	What Dashboard?		
7.	What is scatter plot?		

### CHAPTER 1 TO 16 THREE MARK BOOK BACK & PUBLIC QUESTIONS

<b>CHAPTER – 1 ( FUNCTION )</b>			
1.	Mention the characteristics of Interface. (M-2023, J-2024)		
2.	Why strlen is called pure function?		
3.	What is the side effect of impure function? Give example.		
4.	Differentiate pure and impure function. (M-2020, M-2024)		
<b>CHAPTER – 2 ( DATA ABSTRACTION )</b>			
1.	Differentiate concrete data type and abstract data type.		
2.	Which strategy is used for program designing? Define that Strategy.		
3.	Identify Which of the following are constructors and selectors? (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 (M-2024)		
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]		
1.	Define abstraction. What is abstract data types?		
2.	What is selector? What are the parts of a program? (S-2020)		
<b>(CHAPTER-3) ( SCOPING )</b>			
1.	Define Local scope with an example. (S-2021)		
2.	Define Global scope with an example. (J-2024)		
3.	Define Enclosed scope with an example.		
4.	Why access control is required?		
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		
1.	Write any three characteristics of modules. (J-2023)		
<b>CHAPTER – 4 ( ALGORITHMIC STRATEGIES )</b>			
1.	List the characteristics of an algorithm. (M-2022)		
2.	Discuss about Algorithmic complexity and its types.		
3.	What are the factors that influence time and space complexity?		
4.	Write a note on Asymptotic notation. (M-2020, J-2023, M-2024)		
5.	What do you understand by Dynamic programming? (S-2020, M-2023)		
1.	What is an Algorithm? List any three characteristics of an algorithm. (S-2021)		
<b>CHAPTER – 5 ( PYTHON - VARIABLES AND OPERATORS )</b>			
1.	Write short notes on Arithmetic operator with examples. (S-2021, M-2022)		
2.	What are the assignment operators that can be used in Python?		
3.	Explain Ternary operator with examples. (M-2020, M-2023)		
4.	Write short notes on Escape sequences with examples. (J-2024)		
5.	What are string literals? Explain. (J-2023)		
<b>CHAPTER – 6 ( CONTROL STRUCTURES )</b>			
1.	Write a program to display. A A B A B C A B C D A B C D E (M-2022)		
2.	Write note on if.. else structure. (J-2023)		
3.	Using if.. else.. elif statement write a suitable program to display largest of 3 numbers. (M-2024)		
4.	Write the syntax of while loop. (J-2022, M-2023, J-2024)		

5.	List the differences between break and continue statements. (M-2022)
1.	Write the syntax of Nested if elif .else statement with example. (S-2020)
<b>CHAPTER – 7 ( PYTHON FUNCTIONS )</b>	
1.	Write the rules of local variable. (M-2022)
2.	Write the basic rules for global keyword in python. (J-2022, (J-2024))
3.	What happens when we modify global variable inside the function?
4.	Differentiate ceil () and floor () function. (M-2023)
5.	Write a Python code to check whether a given year is leap year or not. (J-2023)
6.	What is composition in functions? (J-2023)
7.	How recursive function works? (M-2020)
8.	What are the points to be noted while defining a function?
<b>CHAPTER – 8 ( STRINGS AND STRING MANIPULATION )</b>	
1.	Write a Python program to display the given pattern. (M-2023) COMPUTER COMPUTE COMPUT COMPU COMP COM CO C
2.	Write a short about the followings with suitable example. (a) capitalize() (b) swap case() (M-2024)
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.
5.	Write a note about count () function in python.
1.	What will be the output of the given Python program? (S-2020) a = "Computer" b = "Science" x = a[:4] +b[len(b)-3:] print(x)
<b>CHAPTER – 9 ( LISTS, TUPLES, SETS AND DICTIONARY )</b>	
1.	What are difference between List and Tuple?
2.	Write a shot note about sort () (J-2024)
3.	What will be the output of the following code? 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? (J-2023)
1.	What are the advantages of Tuples over a list? (S-2021)
2.	What will be the output of the following code? list = [3**x for x in range(5)] print(list) (M-2020)
<b>CHAPTER – 10 ( PYTHON CLASSES AND OBJECTS )</b>	
1.	What are class members? How do you define it? (S-2021)
2.	Write a class with two private class variables and print the sum using a method.
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? (J-2022) class Greeting: def __init__(self, name): self.__name = name def display(self): print("Good Morning ", self.__name) obj=Greeting('BinduMadhavan') obj.display()
5.	How do define constructor and destructor in Python? (M-2024)
1.	Write a short note on Public and Private data member in Python? (S-2020)
2.	What is the output of the following program? (M-2020) class Greeting: def __init__(self, name): self.__name = name def display(self): print("Welcome to ", self.__name) obj=Greeting('Python Programming') obj.display()
<b>CHAPTER – 11 ( DATABASE CONCEPTS )</b>	
1.	What is the difference between Select and Project command?
2.	What is the role of DBA? (J-2023)
3.	Explain Cartesian Product with a suitable example.
4.	Explain Object Model with example.
5.	Write a note on different types of DBMS users. (S-2020, J-2024)
<b>CHAPTER – 12 ( STRUCTURED QUERY LANGUAGE )</b>	
1.	What is a constraint? Write short note on Primary key constraint.
2.	Write a SQL statement to modify the student table structure by adding a new field. (J-2022)
3.	Write any three DDL commands. (S-2021)
4.	Write the use of Save point command with an example.
5.	Write a SQL statement using DISTINCT keyword. (M-2022)
1.	What is the use of DELETE, TRUNCATE and DROP commands in SQL? (S-2020)
2.	Write short notes on TCL commands in SQL (M-2020, M-2024)

<b>CHAPTER – 13 ( PYTHON AND CSV FILES )</b>	
1.	Write a note on open () function of python. What is the difference between the two methods? (J-2022)
2.	Write a Python program to modify an existing file. (J-2022)
3.	Write a Python program to read a CSV file with default delimiter comma (,)
4.	What is the difference between the write modes and append mode? (S-2021)
5.	What is the difference between reader () method and DictReader() class? (M-2020, M-2023)
<b>CHAPTER – 14 ( IMPORTING C++ PROGRAMS IN PYTHON )</b>	
1.	Differentiate PYTHON and C++ (S-2021, J-2023)
2.	What are the applications of scripting language? (S-2020, M-2024)
3.	What is MinGW? What is its use? (J-2024)
4.	Identify the module, operator, definition name for the following: Welcome . display() (J-2022)
5.	What is sys.argv? What does it contain? (M-2022)
1.	Write about the steps of python program executing C++ program using control statement (M-2023)
<b>CHAPTER – 15 ( DATA MANIPULATION THROUGH SQL )</b>	
1.	What is SQLite? What is its advantage?
2.	Mention the difference between fetch one () and fetch many () (M-2020, J-2022, M-2023, J-2024)
3.	What is the use of Where clause. Give a python statement Using the where Clause. (M-2022, M-2024)
4.	Read the following details. Based on that write a python script to display department wise record. 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
1.	Write a short note on a) Group by b) Order by clause in SQL (S-2020)
<b>CHAPTER – 16 ( DATA VISUALIZATION USING PYPLOT: LINE , PIE AND BAR CHAT )</b>	
1.	Draw the output for the following data visualization plot. <pre>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()</pre>
2.	Write any three uses of data visualization. (M-2022)
3.	Write the plot for the following pie chart output: 
1.	List the general types of data visualization. (J-2022)

**CHAPTER 1 TO 16 BOOK INSIDE THREE MARK QUESTIONS**

<b>CHAPTER – 1 ( FUNCTION )</b>	
1.	Answer to the following questions with the help of the function given below: 1) let rec pow (a: int) (b: int) : int := 2) if b=0 then 1 3) 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?
2.	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
3.	Write a function that find the minimum of its 3 arguments
4.	Mention the characteristics of interface.
<b>CHAPTER – 2 ( DATA ABSTRACTION )</b>	
1.	What is selector? What are the parts of a program?
2.	Define abstraction. What is abstract data types?
3.	Give an example of Implementing an ADT.
4.	Examples of constructors and selectors
5.	What are the different ways to access the elements of a list. Give example.



	<b>(CHAPTER-3) ( SCOPING )</b>
1.	Write any three characteristics of modules.
2.	What is outer x variable and inner x variable?
3.	Compare Public protected and private members.
	<b>CHAPTER – 4 ( ALGORITHMIC STRATEGIES )</b>
1.	Write the difference between Algorithm and Program.
2.	Write a Pseudo code for linear search.
3.	Write a Pseudo code for bubble sort algorithm.
4.	What are the different phases of analysis and performance evaluation of an algorithm?
5.	What are the factors that measure the execution time of an algorithm?
	<b>CHAPTER – 5 ( PYTHON - VARIABLES AND OPERATORS)</b>
1.	What are the rules to be followed while creating an identifier in Python?
2.	Explain comments in python.
3.	Explain indentation in python.
	<b>CHAPTER – 6 ( CONTROL STRUCTURES )</b>
1.	What is the role of range ( ) in for loop of python?
2.	Draw a flow chart to explain in while loop.
3.	Write the syntax of if..elif..else statement in python.
4.	Which jump statement is used as placeholder?
	<b>CHAPTER – 7 ( PYTHON FUNCTIONS )</b>
1.	Evaluate the following function. a) math. ceil (3.5) b) abs (-3.2) c) Pow (2,0)
2.	What is the use of format ( ) function? Give an example.
3.	Write a short note about sort ( )
4.	Explain about Return statement.
5.	How can you pass parameters in function?
	<b>CHAPTER – 8 ( STRINGS AND STRING MANIPULATION )</b>
1.	What is the use of the operator += in python string operation. (or) Write Short note on string slicing
2.	What will be output of the following python program? str1 = "welcome" str2 = "to school" str3 = str1[3:] + str2[len(str2)-1:] print(str3)
3.	How index value allocated to each character of a string in Python?
4.	Explain about slicing and slicing with stride
5.	Write a note on string formatting operators of python.
6.	Write a python program to display given pattern C C O C O C C O M C O M P C O M P U C O M P U T C O M P U T E C O M P U T E R
7.	List out formatting characters
8.	Explain about escape sequences supported by python.
	<b>CHAPTER – 9 ( LISTS, TUPLES, SETS AND DICTIONARY )</b>
1.	Write execution table for the following Python code.
2.	Write a simple python program with list of five marks and print the sum of all the marks using while loop.
3.	What is dictionary?
4.	What is reverse using indexing list?
5.	Write a short note on pop ( ) function in Python.
6.	Explain list and Tuples.
7.	Write short note on (i) Remove (ii) clear
8.	Write short note on Sort ( ) function with suitable examples.
	<b>CHAPTER – 10 ( PYTHON CLASSES AND OBJECTS )</b>
1.	Write a short note on Public and Private data member in Python?
2.	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("Tamil Nadu") obj.display()
3.	What is constructor?
4.	Write a Python program to check and print if the given number is odd or even using class.
5.	What is the output of the following program? class Greeting: def __init__(self, name): self.__name = name def display(self): print("Welcome to ", self.__name) obj=Greeting("Python Programming") obj.display()
	<b>CHAPTER – 11 ( DATABASE CONCEPTS )</b>

1.	Write a short note on Unary Relational Operations of DBMS.
2.	What are the components of DBMS?
3.	Differentiate between data and information.
<b>CHAPTER – 12 ( STRUCTURED QUERY LANGUAGE )</b>	
1.	Write short notes on TCL commands in SQL
2.	Explain about SQL
<b>CHAPTER – 13 ( PYTHON AND CSV FILES )</b>	
1.	Write about CSV files?
2.	How csv.write() function is used to create a normal CSV file in Python?
<b>CHAPTER – 14 ( IMPORTING C++ PROGRAMS IN PYTHON )</b>	
1.	Write about MinGW Interface.
2.	Write about the steps of python program executing C++ program using control statement
<b>CHAPTER – 15 ( DATA MANIPULATION THROUGH SQL )</b>	
1.	Write a short note on (i) fetchall() (ii) fetchone() (iii) fetchmany
2.	Write a short note on a) Group by b) Order by clause in SQL
<b>CHAPTER – 16 ( DATA VISUALIZATION USING PYPLOT: LINE , PIE AND BAR CHAT )</b>	
1.	Define data visualization. Mention its types and uses.
2.	What is pie chart? How will you create pie chart in Python? Give an example.

### CHAPTER 1 TO 16 FIVE MARK BOOK BACK & PUBLIC QUESTIONS

<b>CHAPTER – 1 ( FUNCTION )</b>	
1.	What are called Parameters and write a note on (i) Parameter without Type (ii) Parameter with Type (M-2022, J-2024)
2.	Identify in the following program. <code>let rec gcd a b := if b &lt;&gt; 0 then gcd b (a mod b) else return a</code> 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.
<b>CHAPTER – 2 ( DATA ABSTRACTION )</b>	
1.	How will you facilitate data abstraction? Explain it with suitable example. (J-2023, M-2024)
2.	What is a List? Why List can be called as Pairs. Explain with suitable example. (M-2023)
3.	How will you access the multi-item? Explain with example.
<b>CHAPTER -3 ( SCOPING )</b>	
1.	Explain the types of scopes for variable or LEGB rule with example. (S-2021, M-2022, M-2024)
2.	Write Five Characteristics of Modules. (J-2024)
3.	Write any five benefits in using modular programming.
<b>CHAPTER – 4 ( ALGORITHMIC STRATEGIES )</b>	
1.	Explain the characteristics of an algorithm.
2.	Discuss about Linear search algorithm. (M-2020, J-2020, J-2022, M-2023)
3.	What is Binary search? Discuss with example. (S-2021, J-2023, M-2024)
4.	Explain the Bubble sort algorithm with example. (M-2022)
5.	Explain the concept of Dynamic programming with suitable example. (J-2024)
<b>CHAPTER – 5 ( PYTHON - VARIABLES AND OPERATORS )</b>	
1.	Describe in detail the procedure Script mode programming.
2.	Explain input () and print () functions with examples. (M-2020, M-2022, J-2023, M-2024)
3.	Discuss in detail about Tokens in Python. (S-2021)(M-2023) (J-2024)
1.	Explain different types of operators in python. (J-2020)(J-2022)
<b>CHAPTER – 6 ( CONTROL STRUCTURES )</b>	
1.	Write a detail note on for loop. (J-2020, S-2021, M-2022, J-2022, J-2024)
2.	Write a detail note on if..else..elif statement with suitable example.
3.	Write a program to display all 3 digit odd numbers.
4.	Write a program to display multiplication table for a given number.
1.	Explain 'continue' statement with examples. (M-2023)
2.	Write output of the following program (M-2020) <code>i=1 While(i&lt;=6) for j in range (1,i) print(j,end='t) print(end='n') i+=1</code>
<b>CHAPTER – 7 ( PYTHON FUNCTIONS )</b>	
1.	Explain the different types of function with an example. (J-2020, J-2022)

2.	Explain the scope of variables with an example. (J-2023, M-2024)																														
3.	Explain the following built-in functions. (a) id() (b) chr() (c) round() (d) type() (e) pow() (M-2020, M-2023)																														
4.	Write a Python code to find the L.C.M. of two numbers.																														
5.	Explain recursive function with an example. (J-2024)																														
<b>CHAPTER – 8 ( STRINGS AND STRING MANIPULATION )</b>																															
1.	Explain about string operators in python with suitable example. (J-2023, J-2024)																														
1.	I] What is slicing? (S-2021) II] What is output for following python command: str="Thinking with python" a)print(str[::3]) Ans: Tnnwhy o b)print(str[::-3]) Ans: nt igkn c)print(str[9:13]) Ans: with																														
2.	What will the output of the given python Snippet? str1="Welcome to Python" (M-2020) 1) print(str1) 2) print(str 1[11:17]) 3) print(str1[11:17:2]) 4) print(str1[: : 4]) 5) print(str1[: - 4])																														
<b>CHAPTER – 9 ( LISTS, TUPLES, SETS AND DICTIONARY )</b>																															
1.	What the different ways to insert an element in a list? Explain with suitable example. (J-2023)																														
2.	What is the purpose of range ()? Explain with an example. (J-2020, S-2021, J-2022, M-2024)																														
3.	What is nested tuple? Explain with an example. (J-2020, J-2022, M-2023)																														
4.	Explain the different set operations supported by python with suitable example. (M-2020, M-2022, J-2024)																														
<b>CHAPTER – 10 ( PYTHON CLASSES AND OBJECTS )</b>																															
1.	Explain about constructor and destructor with example. (M-2020)																														
<b>CHAPTER – 11 ( DATABASE CONCEPTS )</b>																															
1.	Explain the different types of data model.																														
2.	Explain the different types of relationship mapping. (M-2023)																														
3.	Differentiate DBMS and RDBMS. (M-2020, M-2023, J-2024)																														
4.	Explain the different operators in Relational algebra with suitable examples.																														
5.	Explain characteristics of RDBMS. (J-2023)																														
1.	Explain the following operators in Relational algebra with suitable examples (M-2024) (i) UNION (ii) INTERSECTION (iii) DIFFERENCE (iv) CARTESIAN PRODUCT																														
<b>CHAPTER – 12 ( STRUCTURED QUERY LANGUAGE )</b>																															
1.	Write the different types of constraints and their functions. (J-2020, S-2021, J-2022)																														
2.	Consider the following employee table. Write SQL commands for the Questions. (i) to (v). <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>EMP CODE</th> <th>NAME</th> <th>DESIG</th> <th>PAY</th> <th>ALLOWANCE</th> </tr> </thead> <tbody> <tr> <td>S1001</td> <td>Hariharan</td> <td>Supervisor</td> <td>29000</td> <td>12000</td> </tr> <tr> <td>P1002</td> <td>Shaji</td> <td>Operator</td> <td>10000</td> <td>5500</td> </tr> <tr> <td>P1003</td> <td>Prasad</td> <td>Operator</td> <td>12000</td> <td>6500</td> </tr> <tr> <td>C1004</td> <td>Manjima</td> <td>Clerk</td> <td>8000</td> <td>4500</td> </tr> <tr> <td>M1005</td> <td>Ratheesh</td> <td>Mechanic</td> <td>20000</td> <td>7000</td> </tr> </tbody> </table>	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
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	1) To display the details of all employees in descending order of pay. 2) To display all employees whose allowance is between 5000 and 7000. 3) To remove the employees who are mechanic. 4) To add a new row. 5) To display the details of all employees who are operators.																														
3.	What are the components of SQL? Write the commands in each. (M-2024)																														
4.	Construct the following SQL statements in the student table. (M-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. (M-2020)																														
<b>CHAPTER – 13 ( PYTHON AND CSV FILES )</b>																															
1.	Differentiate Excel file and CSV file. (M-2022, J-2024)																														
2.	Tabulate the different mode with its meaning.																														
3.	Write the different methods to read a File in Python. (J-2020, J-2022, J-2023, M-2024)																														
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.																														
<b>CHAPTER – 14 ( IMPORTING C++ PROGRAMS IN PYTHON )</b>																															
1.	Write any 5 features of Python. (M-2020, J-2023) (M-2024)																														
2.	Explain each word of the following command. Python <filename.py> -<i></i><C++ filename without cpp extension> (M-2022)																														
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. (M-2023)																														
5.	Write a Python program to execute the following C++ coding.																														
<b>CHAPTER – 15 ( DATA MANIPULATION THROUGH SQL )</b>																															
1.	Write in brief about SQLite and the steps used to use it. (J-2020, J-2022, J-2023)																														
2.	Write the Python script to display all the records of the following table using fetchmany () (S-2021)																														

	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.

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:

1. Construct the following: a) GROUB BY b) ORDER BY clause. (M-2022)

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

1. Explain in detail the types of pyplots using Matplotlib.

2. Explain the various buttons in a matplotlib window. (M-2024)

3. Explain the purpose of the following functions. (M-2022)  
a. plt.xlabel b. plt.ylabel c. plt.title d. plt.legend() e. plt.show()

1. What are the key differences between Histogram and Bar graph? (S-2021)(M-2023)

### CHAPTER 1 TO 16 BOOK INSIDE FIVE MARK QUESTIONS

	<b>CHAPTER – 1 ( FUNCTION )</b>
1.	Chameleons of Chrome land problem using function.
	<b>(CHAPTER-3) ( SCOPING )</b>
1.	Why scope should be used for variable? Explain Global scope with an example.
2.	Explain about access control.
	<b>CHAPTER – 4 ( ALGORITHMIC STRATEGIES )</b>
1.	Explain the Insertion Sort algorithm with example.
2.	Explain the Selection sort algorithm.
3.	Explain about Complexity of an algorithm.
4.	Explain about Fibonacci Series with example
	<b>CHAPTER – 5 ( PYTHON - VARIABLES AND OPERATORS )</b>
1.	Python Data types
2.	Write an Output for the following python program 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)
3.	Write a note on : i ) Comments ii ) Indentation
4.	Explain Operators in Python. [Refer book examples]
	<b>CHAPTER – 6 ( CONTROL STRUCTURES )</b>
1.	Write a loop on while loop.
2.	A) Write a python program to display all 3 digit even numbers. Using for loop B) Write the output for the following program i=1 while (i<=6): for j in range (1,i): print (j,end='t') print(end='\n') i+=1
3.	Explain briefly about Jump statement in python.
4.	What are the different types of Loops in Python? Explain within example.

5.	Explain 'continue' statement with examples.																																				
6.	Write a program to check if a number is positive, Negative or Zero.																																				
<b>CHAPTER - 7 ( PYTHON FUNCTIONS )</b>																																					
1.	Explain the following built-in functions. 1.abs () 2.ord () 3. bin () 4. min () 5.max () 6.sum () 7. Format () 8.floor () 9. Ceil () 10.sort ()																																				
2.	Explain the functions of return statement with syntax and example.																																				
3.	Explain about lambda function with suitable example.																																				
4.	Explain different types of arguments used in python with an example.																																				
5.	Debug the following python program to get the given output. Output: Inside add() function x value is:10 In main x value is:10 Program: x=10 define add: globally x: x = x+10 print ('Inside add() function x value is:') add print ("In main x value is:")																																				
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3.	Write a program to check string palindrome or not.																																				
4.	Write the short note on the following built-in string functions.(i) capitalize() (ii) isalpha() (iii) isalnum() (iv) lower()																																				
5.	Explain the following string functions with suitable examples. (i) center() (ii) find ()																																				
<b>CHAPTER - 9 ( LISTS, TUPLES, SETS AND DICTIONARY )</b>																																					
1.	Explain the following list function: i) copy () ii) count () iii) index () iv) reverse () v) sort ()																																				
2.	What will be the output of the following python program? N = [ ] for x in range(1, 11): N.append(x) Num=tuple(N) print(Num) for index, i in enumerate(N): if(i%2==1): del N[index] print(N)																																				
3.	How would you access elements of a list?																																				
4.	Write the Python commands for the following based on above list. Mylist = [10, 20, 30, 49, 50, 60, 70, 80, 90, 100] 1. To print all elements in list. 2. Find list length 3. Add multiple elements [110, 120, 130] 4. Delete from fourth element to seventh element. 5. Delete entire list																																				
5.	Compare remove (), pop () and clear () function in Python.																																				
<b>CHAPTER - 10 ( PYTHON CLASSES AND OBJECTS )</b>																																					
1.	Find the output of the following python code. class Sample: num=0 def __init__(self, var): Sample.num+=1 self.var=var print("The object value is = ", var) print("The count of object created = ", Sample.num) def __del__(self): Sample.num-=1 print("Object with value %d is exit from the scope"%self.var) S1=Sample(15) S2=Sample(35) S3=Sample(45)																																				
2.	How to define a class in python? Explain with example.																																				
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4.	How will you create the class and objects in python?																																				
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	<b>CHAPTER - 16 ( DATA VISUALIZATION USING PYPLOT: LINE , PIE AND BAR CHAT )</b>
1.	What are the key differences between Histogram and Bar graph?



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