

12TH COMPUTER SCIENCE**Lesson Wise One Mark****Unit I Problem Solving Techniques****CHAPTER 1 FUNCTION****Choose the best answer:-**

- The small sections of code that are used to perform a particular task is called
a. Subroutines b. Files c. Pseudo code d. Modules
- Which of the following is a unit of code that is often defined within a greater code structure?
a. Subroutines b. Function c. Files d. Modules
- Which of the following is a distinct syntactic block?
a. Subroutines b. Function c. Definition d. Modules
- The variables in a function definition are called as
a. Subroutines b. Function c. Definition d. Parameters
- The values which are passed to a function definition are called
a. Arguments b. Subroutines c. Function d. Definition
- Which of the following are mandatory to write the type annotations in the function definition?
a. Curly braces b. Parentheses c. Square brackets d. indentations
- Which of the following defines what an object can do?
a. Operating System b. Compiler c. Interface d. Interpreter
- Which of the following carries out the instructions defined in the interface?
a. Operating System b. Compiler c. Implementation d. Interpreter
- The functions which will give exact result when same arguments are passed are called
a. Impure functions b. Partial Functions
c. Dynamic Functions d. Pure functions
- The functions which cause side effects to the arguments passed are called
(A) impure function (B) Partial Functions
(C) Dynamic Functions (D) Pure functions

Unit I Problem Solving Techniques**CHAPTER 2 DATA ABSTRACTION****Choose the best answer:-**

- Which of the following functions that build the abstract data type ?
a. Constructors b. Destructors c. recursive d. Nested
- Which of the following functions that retrieve information from the data type?
a. Constructors b. Selectors c. recursive d. Nested
- The data structure which is a mutable ordered sequence of elements is called
a. Built in b. List c. Tuple d. Derived data
- A sequence of immutable objects is called
a. Built in b. List c. Tuple d. Derived data
- The data type whose representation is known are called
a. Built in datatype b. Derived datatype
c. Concrete datatype d. Abstract datatype
- The data type whose representation is unknown are called
a. Built in datatype b. Derived datatype
c. Concrete datatype d. Abstract datatype
- Which of the following is a compound structure?
a. Pair b. Triplet c. single d. quadrat

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8. Bundling two values together into one can be considered as
 - a. Pair
 - b. Triplet
 - c. single
 - d. quadrat
9. Which of the following allow to name the various parts of a multi-item object?
 - a. Tuples
 - b. Lists
 - c. Classes
 - d. quadrats
10. Which of the following is constructed by placing expressions within square brackets?
 - a. Tuples
 - b. Lists
 - c. Classes
 - d. quadrats

Unit I Problem Solving Techniques

CHAPTER 3 SCOPING

Choose the best answer:-

1. Which of the following refers to the visibility of variables in one part of a program to another part of the same program.
 - (A) Scope
 - (B) Memory
 - (C) Address
 - (D) Accessibility
2. The process of binding a variable name with an object is called
 - (A) Scope
 - (B) Mapping
 - (C) late binding
 - (D) early binding
3. Which of the following is used in programming languages to map the variable and object?
 - (A) ::
 - (B) :=
 - (C) =
 - (D) ==
4. Containers for mapping names of variables to objects is called
 - (A) Scope
 - (B) Mapping
 - (C) Binding
 - (D) Namespaces
5. Which scope refers to variables defined in current function?
 - (A) Local Scope
 - (B) Global scope
 - (C) Module scope
 - (D) Function Scope
6. The process of subdividing a computer program into separate sub-programs is called
 - (A) Procedural Programming
 - (B) Modular programming
 - (C) Event Driven Programming
 - (D) Object oriented Programming
7. Which of the following security technique that regulates who can use resources in a computing environment?
 - (A) Password
 - (B) Authentication
 - (C) Access control
 - (D) Certification
8. Which of the following members of a class can be handled only from within the class?
 - (A) Public members
 - (B) Protected members
 - (C) Secured members
 - (D) Private members
9. Which members are accessible from outside the class?
 - (A) Public members
 - (B) Protected members
 - (C) Secured members
 - (D) Private members
10. The members that are accessible from within the class and are also available to its sub-classes is called
 - (A) Public members
 - (B) Protected members
 - (C) Secured members
 - (D) Private members

Unit I Problem Solving Techniques

CHAPTER 4 ALGORITHMIC STRATEGIES

Choose the best answer:-

1. The word comes from the name of a Persian mathematician Abu Ja'far Mohammed ibn-i Musa al Khowarizmi is called?
 - (A) Flowchart
 - (B) Flow
 - (C) Algorithm
 - (D) Syntax
2. From the following sorting algorithms which algorithm needs the minimum number of swaps?
 - (A) Bubble sort
 - (B) Quick sort
 - (C) Merge sort
 - (D) Selection sort

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3. Two main measures for the efficiency of an algorithm are
 (A) Processor and memory (B) Complexity and capacity
 (C) Time and space (D) Data and space
4. The complexity of linear search algorithm is
 (A) $O(n)$ (B) $O(\log n)$ (C) $O(n^2)$ (D) $O(n \log n)$
5. From the following sorting algorithms which has the lowest worst case complexity?
 (A) Bubble sort (B) Quick sort (C) Merge sort (D) Selection sort
6. Which of the following is not a stable sorting algorithm?
 (A) Insertion sort (B) Selection sort (C) Bubble sort (D) Merge sort
7. Time complexity of bubble sort in best case is
 (A) $\theta(n)$ (B) $\theta(n \log n)$ (C) $\theta(n^2)$ (D) $\theta(n(\log n)^2)$
8. The Θ notation in asymptotic evaluation represents
 (A) Base case (B) Average case (C) Worst case (D) NULL case
9. If a problem can be broken into subproblems which are reused several times, the problem possesses which property?
 (A) Overlapping subproblems (B) Optimal substructure
 (C) Memoization (D) Greedy
10. In dynamic programming, the technique of storing the previously calculated values is called ?
 (A) Saving value property (B) Storing value property
 (C) Memoization (D) Mapping

Unit II Core Python

CHAPTER 5 PYTHON - VARIABLES AND OPERATORS

Choose the best answer:-

1. Who developed Python ?
 (A) Ritchie (B) Guido Van Rossum
 (C) Bill Gates (D) Sunder Pitchai
2. The Python prompt indicates that Interpreter is ready to accept instruction.
 (A) `>>>` (B) `<<<` (C) `#` (D) `<<`
3. Which of the following shortcut is used to create new Python Program ?
 (A) Ctrl + C (B) Ctrl + F (C) Ctrl + B (D) Ctrl + N
4. Which of the following character is used to give comments in Python Program ?
 (A) `#` (B) `&` (C) `@` (D) `$`
5. This symbol is used to print more than one item on a single line.
 (A) Semicolon(`;`) (B) Dollar(`$`) (C) comma(`,`) (D) Colon(`:`)
6. Which of the following is not a token ?
 (A) Interpreter (B) Identifiers (C) Keyword (D) Operators
7. Which of the following is not a Keyword in Python ?
 (A) break (B) while (C) continue (D) operators
8. Which operator is also called as Comparative operator?
 (A) Arithmetic (B) Relational (C) Logical (D) Assignment
9. Which of the following is not Logical operator?
 (A) and (B) or (C) not (D) Assignment
10. Which operator is also called as Conditional operator?
 (A) Ternary (B) Relational (C) Logical (D) Assignment

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Unit II Core Python

CHAPTER 6 CONTROL STRUCTURES

Choose the best answer:-

1. How many important control structures are there in Python?
A) 3 B) 4 C) 5 D) 6
2. elif can be considered to be abbreviation of
A) nested if B) if..else C) else if D) if..elif
3. What plays a vital role in Python programming?
A) Statements B) Control C) Structure D) Indentation
4. Which statement is generally used as a placeholder?
A) continue B) break C) pass D) goto
5. The condition in the if statement should be in the form of
A) Arithmetic or Relational expression B) Arithmetic or Logical expression
C) Relational or Logical expression D) Arithmetic
6. Which is the most comfortable loop?
A) do..while B) while C) for D) if..elif
7. What is the output of the following snippet?
i=1
while True:
if i%3 ==0:
break
print(i,end="")
i +=1
A) 12 B) 123 C) 1234 D) 124
8. What is the output of the following snippet?
T=1
while T:
print(True)
break
A) False B) True C) 0 D) no output
9. Which amongst this is not a jump statement ?
A) for B) goto C) continue D) break
10. Which punctuation should be used in the blank?
if <condition>_
statements-block 1
else:
statements-block 2
A) ; B) : C) :: D) !

Unit II Core Python

CHAPTER 7 PYTHON FUNCTIONS

Choose the best answer:-

1. A named blocks of code that are designed to do one specific job is called as
(a) Loop (b) Branching (c) Function (d) Block
2. A Function which calls itself is called as
(a) Built-in (b) Recursion (c) Lambda (d) return
3. Which function is called anonymous un-named function
(a) Lambda (b) Recursion (c) Function (d) define

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4. Which of the following keyword is used to begin the function block?
(a) define (b) for (c) finally (d) def
5. Which of the following keyword is used to exit a function block?
(a) define (b) return (c) finally (d) def
6. While defining a function which of the following symbol is used.
(a) ; (semicolon) (b) . (dot) (c) : (colon) (d) \$ (dollar)
7. In which arguments the correct positional order is passed to a function?
(a) Required (b) Keyword (c) Default (d) Variable-length
8. Read the following statement and choose the correct statement(s).
(I) In Python, you don't have to mention the specific data types while defining function.
(II) Python keywords can be used as function name.
(a) I is correct and II is wrong (b) Both are correct
(c) I is wrong and II is correct (d) Both are wrong
9. Pick the correct one to execute the given statement successfully.
if ____ : print(x, " is a leap year")
(a) x%2=0 (b) x%4==0 (c) x/4=0 (d) x%4=0
10. Which of the following keyword is used to define the function testpython(): ?
(a) define (b) pass (c) def (d) while

Unit II Core Python

CHAPTER 8 STRINGS AND STRING MANIPULATION

Choose the best answer:-

1. Which of the following is the output of the following python code?
str1="TamilNadu"
print(str1[::-1])
(a) Tamilnadu (b) Tmlau (c) udanlimaT (d) udaNlimaT
2. What will be the output of the following code?
str1 = "Chennai Schools"
str1[7] = "-"
(a) Chennai-Schools (b) Chenna-School (c) Type error (D) Chennai
3. Which of the following operator is used for concatenation?
(a) + (b) & (c) * (d) =
4. Defining strings within triple quotes allows creating:
(a) Single line Strings (b) Multiline Strings
(c) Double line Strings (d) Multiple Strings
5. Strings in python:
(a) Changeable (b) Mutable (c) Immutable (d) flexible
6. Which of the following is the slicing operator?
(a) {} (b) [] (c) < > (d) ()
7. What is stride?
(a) index value of slide operation (b) first argument of slice operation
(c) second argument of slice operation (d) third argument of slice operation
8. Which of the following formatting character is used to print exponential notation in upper case? (a) %e (b) %E (c) %g (d) %n
9. Which of the following is used as placeholders or replacement fields which get replaced along with format() function?
(a) {} (b) < > (c) ++ (d) ^^
10. The subscript of a string may be:
(a) Positive (b) Negative (c) Both (a) and (b) (d) Either (a) or (b)

12TH COMPUTER SCIENCE**Unit III Modularity and OOps****CHAPTER 9 LISTS, TUPLES, SETS AND DICTIONARY****Choose the best answer:-**

- Pick odd one in connection with collection data type
(a) List (b) Tuple (c) Dictionary (d) Loop
- Let list1=[2,4,6,8,10], then print(List1[-2]) will result in
(a) 10 (b) 8 (c) 4 (d) 6
- Which of the following function is used to count the number of elements in a list?
(a) count() (b) find() (c) len() (d) index()
- If List=[10,20,30,40,50] then List[2]=35 will result
(a) [35,10,20,30,40,50] (b) [10,20,30,40,50,35]
(c) [10,20,35,40,50] (d) [10,35,30,40,50]
- If List=[17,23,41,10] then List.append(32) will result
(a) [32,17,23,41,10] (b) [17,23,41,10,32]
(c) [10,17,23,32,41] (d) [41,32,23,17,10]
- Which of the following Python function can be used to add more than one element within an existing list?
(a) append() (b) append_more() (c) extend() (d) more()
- What will be the result of the following Python code?
S=[x**2 for x in range(5)]
print(S)
(a) [0,1,2,4,5] (b) [0,1,4,9,16] (c) [0,1,4,9,16,25] (d) [1,4,9,16,25]
- What is the use of type() function in python?
(a) To create a Tuple (b) To know the type of an element in tuple.
(c) To know the data type of python object. (d) To create a list.
- Which of the following statement is not correct?
(a) A list is mutable (b) A tuple is immutable.
(c) The append() function is used to add an element.
(d) The extend() function is used in tuple to add elements in a list.
- Let setA={3,6,9}, setB={1,3,9}. What will be the result of the following snippet?
print(setA | setB)
(a) {3,6,9,1,3,9} (b) {3,9} (c) {1} (d) {1,3,6,9}
- Which of the following set operation includes all the elements that are in two sets but not the one that are common to two sets?
(a) Symmetric difference (b) Difference (c) Intersection (d) Union
- The keys in Python, dictionary is specified by
(a) = (b) ; (c) + (d) :

Unit III Modularity and OOps**CHAPTER 10 PYTHON CLASSES AND OBJECTS****Choose the best answer:-**

- Which of the following are the key features of an Object Oriented Programming language?
(a) Constructor and Classes (b) Constructor and Object
(c) Classes and Objects (d) Constructor and Destructor
- Functions defined inside a class:
(a) Functions (b) Module (c) Methods (d) section

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3. Class members are accessed through which operator?
(a) & (b) . (c) # (d) %
4. Which of the following method is automatically executed when an object is created?
(a) __object__() (b) __del__() (c) __func__() (d) __init__()
5. A private class variable is prefixed with
(a) __ (b) && (c) ## (d) **
6. Which of the following method is used as destructor?
(a) __init__() (b) __dest__ () (c) __rem__() (d) __del__()
7. Which of the following class declaration is correct?
(a) class class_name (b) class class_name<>
(c) class class_name: (d) class class_name[]
8. Which of the following is the output of the following program?
class Student:
def __init__(self, name):
self.name=name
S=Student("Tamil")
(a) Error (b) Tamil (c) name (d) self
9. Which of the following is the private class variable?
(a) __num (b) ##num (c) \$\$num (d) &&num
10. The process of creating an object is called as:
(a) Constructor (b) Destructor (c) Initialize (d) Instantiation

Unit IV Database Concepts and MySql
CHAPTER 11 DATABASE CONCEPTS

Choose the best answer:-

1. What is the acronym of DBMS?
a) DataBase Management Symbol b) Database Managing System
c) DataBase Management System d) DataBasic Management System
2. A table is known as a) tuple b) attribute c) relation d) entity
3. Which database model represents parent-child relationship?
a) Relational b) Network c) Hierarchical d) Object
4. Relational database model was first proposed by
a) E F Codd b) E E Codd c) E F Cadd d) E F Codder
5. What type of relationship does hierarchical model represents?
a) one-to-one b) one-to-many c) many-to-one d) many-to-many
6. Who is called Father of Relational Database from the following?
a) Chris Date b) Hugh Darween c) Edgar Frank Codd d) Edgar Frank Cadd
7. Which of the following is an RDBMS?
a) Dbase b) Foxpro c) Microsoft Access d) SQLite
8. What symbol is used for SELECT statement?
a) σ b) Π c) X d) Ω
9. A tuple is also known as
a) table b) row c) attribute d) field
10. Who developed ER model?
a) Chen b) EF Codd c) Chend d) Chand

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Unit IV Modularity and OOPS

CHAPTER 12 STRUCTURED QUERY LANGUAGE

Choose the best answer:-

- Which commands provide definitions for creating table structure, deleting relations, and modifying relation schemas.
a. DDL b. DML c. DCL d. DQL
- Which command lets to change the structure of the table?
a. SELECT b. ORDER BY c. MODIFY d. ALTER
- The command to delete a table is
A) DROP B) DELETE C) DELETE ALL D) ALTER TABLE
- Queries can be generated using
a. SELECT b. ORDER BY c. MODIFY d. ALTER
- The clause used to sort data in a database
a. SORT BY b. ORDER BY c. GROUP BY d. SELECT

Unit IV

CHAPTER 13 PYTHON AND CSV FILES

Choose the best answer:-

- A CSV file is also known as a
(A) Flat File (B) 3D File (C) String File (D) Random File
- The expansion of CRLF is
(A) Control Return and Line Feed (B) Carriage Return and Form Feed
(C) Control Router and Line Feed (D) Carriage Return and Line Feed
- Which of the following module is provided by Python to do several operations on the CSV files? (A) py (B) xls (C) csv (D) os
- Which of the following mode is used when dealing with non-text files like image or exe files? (A) Text mode (B) Binary mode (C) xls mode (D) csv mode
- The command used to skip a row in a CSV file is
(A) next() (B) skip() (C) omit() (D) bounce()
- Which of the following is a string used to terminate lines produced by writer() method of csv module? (A) Line Terminator (B) Enter key
(C) Form feed (D) Data Terminator
- What is the output of the following program?

```
import csv
d=csv.reader(open('c:\PYPRG\ch13\city.csv'))
next(d)
for row in d:
print(row)
```

if the file called "city.csv" contain the following details chennai,mylapore umbai,andheri
A) chennai,mylapore (B) mumbai,andheri
(C) chennai (D) chennai,mylapore
mumba mumbai,andheri
- Which of the following creates an object which maps data to a dictionary?
(A) listreader() (B) reader() (C) tuplereader() (D) DicReader ()
- Making some changes in the data of the existing file or adding more data is called
(A) Editing (B) Appending (C) Modification (D) Alteration

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10. What will be written inside the file test.csv using the following program

```
import csv
D = [['Exam'], ['Quarterly'], ['Halfyearly']]
csv.register_dialect('M', lineterminator = '\n')
with open('c:\pyprg\ch13\line2.csv', 'w') as f:
    wr = csv.writer(f, dialect='M')
    wr.writerows(D)
f.close()
```

- (A) Exam Quarterly Halfyearly (B) Exam Quarterly Halfyearly
(C) E (D) Exam,
Q Quarterly,
H Halfyearly

Unit V Integrating Python with MySql and C++

CHAPTER 14 IMPORTING C++ PROGRAMS IN PYTHON

Choose the best answer:-

- Which of the following is not a scripting language?
(A) JavaScript (B) PHP (C) Perl (D) HTML
- Importing C++ program in a Python program is called
(A) wrapping (B) Downloading (C) Interconnecting (D) Parsing
- The expansion of API is
(A) Application Programming Interpreter (B) Application Programming Interface
(C) Application Performing Interface (D) Application Programming Interlink
- A framework for interfacing Python and C++ is
(A) Ctypes (B) SWIG (C) Cython (D) Boost
- Which of the following is a software design technique to split your code into separate parts?
(A) Object oriented Programming (B) Modular programming
(C) Low Level Programming (D) Procedure oriented Programming
- The module which allows you to interface with the Windows operating system is
(A) OS module (B) sys module (c) csv module (d) getopt module
- getopt() will return an empty array if there is no error in splitting strings to
(A) argv variable (B) opt variable (c) args variable (d) ifile variable
- Identify the function call statement in the following snippet.
if __name__ == '__main__':
main(sys.argv[1:])
(A) main(sys.argv[1:]) (B) __name__ (C) __main__ (D) argv
- Which of the following can be used for processing text, numbers, images, and scientific data?
(A) HTML (B) C (C) C++ (D) PYTHON
- What does __name__ contains ?
(A) c++ filename (B) main() name (C) python filename (D) os module name

12TH COMPUTER SCIENCE**Unit V****CHAPTER 15 DATA MANIPULATION THROUGH SQL****Choose the best answer:-**

- Which of the following is an organized collection of data?
(A) Database (B) DBMS (C) Information (D) Records
- SQLite falls under which database system?
(A) Flat file database system (B) Relational Database system
(C) Hierarchical database system (D) Object oriented Database system
- Which of the following is a control structure used to traverse and fetch the records of the database?
(A) Pointer (B) Key (C) Cursor (D) Insertion point
- Any changes made in the values of the record should be saved by the command
(A) Save (B) Save As (C) Commit (D) Oblige
- Which of the following executes the SQL command to perform some action?
(A) Execute() (B) Key() (C) Cursor() (D) run()
- Which of the following function retrieves the average of a selected column of rows in a table?
(A) Add() (B) SUM() (C) AVG() (D) AVERAGE()
- The function that returns the largest value of the selected column is
(A) MAX() (B) LARGE() (C) HIGH() (D) MAXIMUM()
- Which of the following is called the master table?
(A) sqlite_master (B) sql_master (C) main_master (D) master_main
- The most commonly used statement in SQL is
(A) cursor (B) select (C) execute (D) commit
- Which of the following clause avoids the duplicate?
(A) Distinct (B) Remove (C) Where (D) GroupBy

Unit V**CHAPTER 16 DATA VISUALIZATION USING PYPLLOT: LINE CHART, PIE CHART AND BAR CHART****Choose the best answer:-**

- Which is a python package used for 2D graphics?
a. matplotlib.pyplot b. matplotlib.pip
c. matplotlib.numpy d. matplotlib.plt
- Identify the package manager for Python packages, or modules.
a. Matplotlib b. PIP c. plt.show() d. python package
- Read the following code: Identify the purpose of this code and choose the right option from the following.
C:\Users\YourName\AppData\Local\Programs\Python\Python36-32\Scripts>pip - version
a. Check if PIP is Installed b. Install PIP
c. Download a Package d. Check PIP version
- Read the following code: Identify the purpose of this code and choose the right option from the following.
C:\Users\Your Name\AppData\Local\Programs\Python\Python36-32\Scripts>pip list
a. List installed packages b. list command

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- c. Install PIP
d. packages installed
5. To install matplotlib, the following function will be typed in your command prompt.
What does “-U” represents?
Python -m pip install -U pip
a. downloading pip to the latest version
b. upgrading pip to the latest version
c. removing pip
d. upgrading matplotlib to the latest version
6. Observe the output figure. Identify the coding for obtaining this output.
- a. `import matplotlib.pyplot as plt`
`plt.plot([1,2,3],[4,5,1])`
`plt.show()`
- b. `import matplotlib.pyplot as plt`
`plt.plot([1,2],[4,5])`
`plt.show()`
- c. `import matplotlib.pyplot as plt`
`plt.plot([2,3],[5,1])`
`plt.show()`
- d. `import matplotlib.pyplot as plt`
`plt.plot([1,3],[4,1])`
`plt.show()`
7. Read the code:
a. `import matplotlib.pyplot as plt`
c. `plt.show()`
b. `plt.plot(3,2)`
d. Identify the output for the above coding.
8. Which key is used to run the module?
a. F6
b. F4
c. F3
d. F5
9. Identify the right type of chart using the following hints.
Hint 1: This chart is often used to visualize a trend in data over intervals of time.
Hint 2: The line in this type of chart is often drawn chronologically.
a. Line chart
b. Bar chart
c. Pie chart
d. Scatter plot
10. Read the statements given below. Identify the right option from the following for pie chart.
- Statement A: To make a pie chart with Matplotlib, we can use the `plt.pie()` function.
Statement B: The `autopct` parameter allows us to display the percentage value using the Python string formatting.
- a. Statement A is correct
b. Statement B is correct
c. Both the statements are correct
d. Both the statements are wrong

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Lesson Wise Two Mark

Unit I Problem Solving Techniques

CHAPTER 1 FUNCTION

Part - II

Answer the following questions (2 Marks)

1. What is a subroutine?
2. Define Function with respect to Programming language.
3. Write the inference you get from X:=(78).
4. Differentiate interface and implementation.
5. Which of the following is a normal function definition and which is recursive function definition
 - i)

```
let rec 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
```

Unit I Problem Solving Techniques

CHAPTER 2 DATA ABSTRACTION

Part - II

Answer the following questions (2 Marks)

1. What is abstract data type?
2. Differentiate constructors and selectors.
3. What is a Pair? Give an example.
4. What is a List? Give an example.
5. What is a Tuple? Give an example.

Unit I Problem Solving Techniques

CHAPTER 3 SCOPING

Part - II

Answer the following questions (2 Marks)

1. What is a scope?
2. Why scope should be used for variable. State the reason.
3. What is Mapping?
4. What do you mean by Namespaces?
5. How Python represents the private and protected Access specifiers?

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Unit I Problem Solving Techniques

CHAPTER 4 ALGORITHMIC STRATEGIES

Part - II

Answer the following questions (2 Marks)

1. What is an Algorithm?
2. Define Pseudo code.
3. Who is an Algorist?
4. What is Sorting?
5. What is searching? Write its types.

Unit II Core Python

CHAPTER 5 PYTHON - VARIABLES AND OPERATORS

Part - II

Answer the following questions : (2 Marks)

1. What are the different modes that can be used to test Python Program ?
2. Write short notes on Tokens.
3. What are the different operators that can be used in Python ?
4. What is a literal? Explain the types of literals ?
5. Write short notes on Exponent data?

Unit II Core Python

CHAPTER 6 CONTROL STRUCTURES

Part -II

Answer the following questions 2 Marks

1. List the control structures in Python.
2. Write note on break statement.
3. Write is the syntax of if..else statement
4. Define control structure.
5. Write note on range () in loop

Unit II Core Python

CHAPTER 7 PYTHON FUNCTIONS

Part - II

Answer the following questions: (2 Marks)

1. What is function?
2. Write the different types of function.
3. What are the main advantages of function?
4. What is meant by scope of variable? Mention its types.
5. Define global scope.
6. What is base condition in recursive function
7. How to set the limit for recursive function? Give an example.

Unit II Core Python

CHAPTER 8 STRINGS AND STRING MANIPULATION

Part -II

Answer the following questions (2 Marks)

1. What is String?
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?

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Unit III Modularity and OOPS

CHAPTER 9 LISTS, TUPLES, SETS AND DICTIONARY

Part - II

Answer the following questions (2 Marks)

1. What is List in Python?
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.
6. What is set in Python?

Unit III Modularity and OOPS

CHAPTER 10 PYTHON CLASSES AND OBJECTS

Part - II

Answer the following questions (2 Marks)

1. What is class?
2. What is instantiation?
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?

Unit IV Database Concepts and MySql

CHAPTER 11 DATABASE CONCEPTS

Part - B

Answer the following questions (2 Marks)

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?

Unit IV Modularity and OOPS

CHAPTER 12 STRUCTURED QUERY LANGUAGE

Part - II

Answer the following questions (2 Marks)

1. Write a query that selects all students whose age is less than 18 in order wise.
2. Differentiate Unique and Primary Key constraint.
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?

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5. What is the difference between SQL and MySQL?

Unit IV**CHAPTER 13 PYTHON AND CSV FILES****Part - II**

Answer the following questions (2 Marks)

1. What is CSV File?
2. Mention the two ways to read a CSV file using Python.
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? Give an example statement.

Unit V Integrating Python with MySql and C++**CHAPTER 14 IMPORTING C++ PROGRAMS IN PYTHON****Part - II**

Answer the following questions (2 Marks)

1. What is the theoretical difference between Scripting language and other programming language?
2. Differentiate compiler and interpreter.
3. Write the expansion of (i) SWIG (ii) MinGW
4. What is the use of modules?
5. What is the use of cd command. Give an example.

Unit V**CHAPTER 15 DATA MANIPULATION THROUGH SQL****Part - II**

Answer the following questions (2 Marks)

1. Mention the users who use 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"?
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?

Unit V**CHAPTER 16 DATA VISUALIZATION USING PYPLOTTING: LINE CHART, PIE CHART AND BAR CHART****Part - II**

Answer the following questions (2 Marks)

1. Define: Data Visualization.
2. List the general types of data visualization.
3. List the types of Visualizations in Matplotlib.
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]).

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Lesson Wise Three Marks

Unit I Problem Solving Techniques

CHAPTER 1 FUNCTION

Part - III

Answer the following questions (3 Marks)

1. Mention the characteristics of Interface.
2. Why strlen is called pure function?
3. What is the side effect of impure function. Give example.
4. Differentiate pure and impure function.
5. What happens if you modify a variable outside the function? Give an example.

Unit I Problem Solving Techniques

CHAPTER 2 DATA ABSTRACTION

Part - III

Answer the following questions (3 Marks)

1. Differentiate Concrete data type and abstract datatype.
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.
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]		

Unit I Problem Solving Techniques

CHAPTER 3 SCOPING

Part - III

Answer the following questions (3 Marks)

1. Define Local scope with an example.
2. Define Global scope with an example.
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
  
```

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Unit I Problem Solving Techniques

CHAPTER 4 ALGORITHMIC STRATEGIES

Part - III

Answer the following questions (3 Marks)

1. List the characteristics of an algorithm.
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.
5. What do you understand by Dynamic programming?

Unit II Core Python

CHAPTER 5 PYTHON - VARIABLES AND OPERATORS

Part - III

Answer the following questions : (3 Marks)

1. Write short notes on Arithmetic operator with examples.
2. What are the assignment operators that can be used in Python?
3. Explain Ternary operator with examples.
4. Write short notes on Escape sequences with examples.
5. What are string literals? Explain.

Unit II Core Python

CHAPTER 6 CONTROL STRUCTURES

Part -III

Answer the following questions 3 Marks

1. Write a program to display
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.
5. List the differences between break and continue statements.

Unit II Core Python

CHAPTER 7 PYTHON FUNCTIONS

Part - III

Answer the following questions: (3 Marks)

1. Write the rules of local variable.
2. Write the basic rules for global keyword in python.
3. What happens when we modify global variable inside the function?
4. Differentiate ceil() and floor() function?
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?
8. What are the points to be noted while defining a function?

12TH COMPUTER SCIENCE**Unit II Core Python
CHAPTER 8 STRINGS AND STRING MANIPULATION****Part -III****Answer the following questions (3 Marks)**

1. Write a Python program to display the given pattern

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

2. Write a short about the followings with suitable example:

(a) capitalize() (b) swapcase()

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.

Unit III Modularity and OOps**CHAPTER 9 LISTS, TUPLES, SETS AND DICTIONARY****Part - III****Answer the following questions (3 Marks)**

1. What are the advantages of Tuples over a list?

2. Write a shot note about sort().

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?

Unit III Modularity and OOps**CHAPTER 10 PYTHON CLASSES AND OBJECTS****Part -III****Answer the following questions (3 Marks)**

1. What are class members? How do you define it?

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?

```
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')
```

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```
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?

Unit IV Database Concepts and MySql**CHAPTER 11 DATABASE CONCEPTS Part -C****Answer the following questions (3 Marks)**

1. What is the difference between Select and Project command?
2. What is the role of DBA?
3. Explain Cartesian Product with a suitable example.
4. Explain Object Model with example.
5. Write a note on different types of DBMS users.

Unit IV Modularity and Oops**CHAPTER 12 STRUCTURED QUERY LANGUAGE****Part -III****Answer the following questions (3 Marks)**

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.
3. Write any three DDL commands.
4. Write the use of Save point command with an example.
5. Write a SQL statement using DISTINCT keyword.

Unit IV**CHAPTER 13 PYTHON AND CSV FILES****Part - III****Answer the following questions (3 Marks)**

1. Write a note on open() function of python. 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.
5. What is the difference between reader() and DictReader() function?

Unit V Integrating Python with MySql and C++**CHAPTER 14 IMPORTING C++ PROGRAMS IN PYTHON****Part - III****Answer the following questions (3 Marks)**

1. Differentiate PYTHON and C++
2. What are the applications of scripting language?
3. What is MinGW? What is its use?
4. Identify the module ,operator, definition name for the following
welcome.display()

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5. What is sys.argv? What does it contain?

Unit V**CHAPTER 15 DATA MANIPULATION THROUGH SQL****Part - III****Answer the following questions (3 Marks)**

1. What is SQLite? What is its advantage?
2. Mention the difference between fetchone() and fetchmany()
3. What is the use of Where Clause. Give a python statement Using the where clause.
4. Read the following details. Based on that write a python script to display department wise records

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

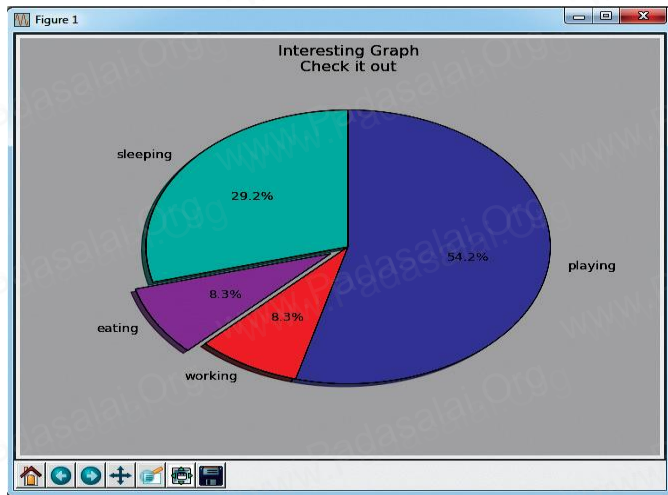
Columns in the table :- Eno, EmpName, Esal, Dept

Unit V**CHAPTER 16 DATA VISUALIZATION USING PYPLOT: LINE CHART, PIE CHART AND BAR CHART****Part - III****Answer the following questions (3 Marks)**

1. Draw the output for the following data visualization plot.

```
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.
3. Write the coding for the following:
 - a. To check if PIP is Installed in your PC.
 - b. To Check the version of PIP installed in your PC.
 - c. To list the packages in matplotlib.
4. Write the plot for the following pie chart output.

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Lesson Wise Five Marks

Unit I Problem Solving Techniques

CHAPTER 1 FUNCTION

Part - IV

Answer the following questions (5Marks)

- What are called Parameters and write a note on
(i) Parameter without Type (ii) Parameter with Type
- Identify in the following program

```
let rec gcd a b :=
```

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

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

Unit I Problem Solving Techniques

CHAPTER 2 DATA ABSTRACTION

Part - IV

Answer the following questions (5Marks)

- How will you facilitate data abstraction. Explain it with suitable example
- What is a List? Why List can be called as Pairs. Explain with suitable example
- How will you access the multi-item. Explain with example.

Unit I Problem Solving Techniques

CHAPTER 3 SCOPING

Part - IV

Answer the following questions (5Marks)

- Explain the types of scopes for variable or LEGB rule with example.
- Write any Five Characteristics of Modules.

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3. Write any five benefits in using modular programming.

Unit I Problem Solving Techniques**CHAPTER 4 ALGORITHMIC STRATEGIES****Part - IV**

Answer the following questions (5Marks)

1. Explain the characteristics of an algorithm.
2. Discuss about Linear search algorithm.
3. What is Binary search? Discuss with example.
4. Explain the Bubble sort algorithm with example.
5. Explain the concept of Dynamic programming with suitable example.

Unit II Core Python**CHAPTER 5 PYTHON - VARIABLES AND OPERATORS****Part - IV**

Answer the following questions : (5 Marks)

1. Describe in detail the procedure Script mode programming.
2. Explain input() and print() functions with examples.
3. Discuss in detail about Tokens in Python

Unit II Core Python**CHAPTER 6 CONTROL STRUCTURES****Part -IV**

Answer the following questions 5 Marks

1. Write a detail note on for loop
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.

Unit II Core Python**CHAPTER 7 PYTHON FUNCTIONS****Part - IV**

Answer the following questions: (5 Marks)

1. Explain the different types of function with an example.
2. Explain the scope of variables with an example.
3. Explain the following built-in functions.
 - (a) id()
 - (b) chr()
 - (c) round()
 - (d) type()
 - (e) pow()
4. Write a Python code to find the L.C.M. of two numbers.
5. Explain recursive function with an example.

Unit II Core Python**CHAPTER 8 STRINGS AND STRING MANIPULATION****Part -IV**

Answer the following questions (5 Marks)

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1. Explain about string operators in python with suitable example.

Unit III Modularity and OOps

CHAPTER 9 LISTS, TUPLES, SETS AND DICTIONARY

Part - IV

Answer the following questions (5 Marks)

1. What the different ways to insert an element in a list. Explain with suitable example.
2. What is the purpose of range()? Explain with an example.
3. What is nested tuple? Explain with an example.
4. Explain the different set operations supported by python with suitable example.

Unit III Modularity and OOps

CHAPTER 10 PYTHON CLASSES AND OBJECTS

Part -IV

Answer the following questions (5 Marks)

1. Write a menu driven program to add or delete stationary items. You should use dictionary to store items and the brand.

Unit IV Database Concepts and MySql

CHAPTER 11 DATABASE CONCEPTS Part -D

Answer the following questions (5 Marks)

1. Explain the different types of data model.
2. Explain the different types of relationship mapping.
3. Differentiate DBMS and RDBMS.
4. Explain the different operators in Relational algebra with suitable examples.
5. Explain the characteristics of DBMS.

Unit IV Modularity and OOps

CHAPTER 12 STRUCTURED QUERY LANGUAGE

Part -IV

Answer the following questions (5 Marks)

1. Write the different types of constraints and their functions.
2. Consider the following employee table. Write SQL commands for the qtns.(i) to (v).

EMP CODE	NAME	DESIG	PAY	ALLO WANCE
S1001	Hariharan	Superviso r	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.

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4. Construct the following SQL statements in the student table-
 - (i) SELECT statement using GROUP BY clause.
 - (ii) SELECT statement using ORDER BY clause.
5. Write a SQL statement to create a table for employee having any five fields and create a table constraint for the employee table.

Unit IV

CHAPTER 13 PYTHON AND CSV FILES

Part - IV

Answer the following questions (5 Marks)

1. Differentiate Excel file and CSV file.
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.

Unit V Integrating Python with MySql and C++

CHAPTER 14 IMPORTING C++ PROGRAMS IN PYTHON

Part - IV

Answer the following questions (5 Marks)

- 1 Write any 5 features of Python.
2. Explain each word of the following command.
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
5. Write a Python program to execute the following c++ coding

```
#include <iostream>
using namespace std;
int main()
{ cout<<"WELCOME";
return(0);
}
```

The above C++ program is saved in a file welcome.cpp

Unit V

CHAPTER 15 DATA MANIPULATION THROUGH SQL

Part - IV

Answer the following questions (5 Marks)

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

3. hat 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

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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

Unit V**CHAPTER 16 DATA VISUALIZATION USING PYPLOTT: LINE CHART, PIE CHART AND BAR CHART****Part - IV****Answer the following questions (5 Marks)**

1. Explain in detail the types of pyplots using Matplotlib.
2. Explain the various buttons in a matplotlib window.
3. Explain the purpose of the following functions:
 - a. plt.xlabel
 - b. plt.ylabel
 - c. plt.title
 - d. plt.legend()
 - e. plt.show()

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