1. FUNCTION

1Marks:

1. The small sections of code that are used to perform a particular task is called   *[March 2023]*
   (A) Subroutines   (B) Files   (C) Pseudo code   (D) Modules

2. Which of the following is a unit of code that is often defined within a greater code structure?   *[July 2022]*
   (A) Subroutines   (B) Function   (C) Files   (D) Modules

3. Which of the following is a distinct syntactic block?   *[May 2022]*
   (A) Subroutines   (B) Function   (C) Definition (D) Modules

4. The variables in a function definition are called as   *[June 2023]*
   (A) Subroutines   (B) Function   (C) Definition (D) Parameters

5. ___ are the basic building blocks of computer programs   *[sep 2020]*
   (A) Subroutines   (B) Files   (C) Pseudo code   (D) Modules

===

2 Marks:

1. Differentiate interface and implementation.   *[June 2023]*

===

3 Marks:

1. Mention the characteristics of Interface.   *[Sep2022], [Mar2023]*
2. Differentiate pure and impure function.   *[March 2020]*

===

5 Marks:

1. What are called Parameters and write a note on   *[May 2022]*
   (i) Parameter without Type   (ii) Parameter with Type parameter

===

2. DATA ABSTRACTION

1. Which of the following functions that build the abstract data type?   *[Sep 2020], [July 2022]*
   (A) Constructors   (B) Destructors
   (C) recursive   (D) Nested

2. Which of the following functions that retrieve information from the data type?   *[May 2022]*
   (A) Constructors   (B) Selectors   (C) recursive   (D) Nested

3. A sequence of immutable objects is called *[March 2020], [July 2022]*
   (A) Built in   (B) List   (C) Tuple   (D) Derived data

4. The data type whose representation is known are called *[Mar 2023]*
   (A) Built in datatype   (B) Derived datatype

     (C) Concrete datatype   (D) Abstract datatype

===

2 Marks:

1. What is abstract data type?   *[May 2022]*
2. Differentiate constructors and selectors.   *[July 2022]*
3. What is a Pair? Give an example.   *[March 2023], [June 2023]*
4. What is a Tuple? Give an example.   *[March 2023]*
5. What is a selector?   What are the parts of a program? *[Sep 2020]*

===

5 Marks:

1. How will you facilitate data abstraction. Explain it with suitable example.   *[June 2023]*
2. What is a List? Why List can be called as Pairs. Explain with suitable example   *[March 2023]*

===

3. SCOPING

1 Marks:

1. The process of binding a variable name with an object is called   *[Sep 2020]*
   (A) Scope   (B) Mapping   (C) late binding   (D) early binding

2. Containers for mapping names of variables to objects is called   *[May 2022]*
   (A) Scope   (B) Mapping   (C) Binding   (D) Namespaces

3. Which scope refers to variables defined in current function?
   (A) Local Scope   (B) Global scope   *[July 2022]*
   (C) Module scope   (D) Function Scope

4. Which members are accessible from outside the class?   *[Mar 2023]*
        (A) Public members   (B) Protected members
        (C) Secured members   (D)Private members

===

2 Marks:

1. What is a scope?   *[March 2023]*
2. What is Mapping?   *[May 2022]*
3. What do you mean by Namespaces?   *[March 2020],[July 2022]*

===

5 Marks:

1. Explain the types of scopes for variable or LEGB rule with example.   *[Sep 2020], [May 2022]*

2. Write any Five Characteristics of Modules.   **[Sep 2020]**
3. Write down the various types of scope.   **March 2023**
===

4. ALGORITHMIC STRATEGIES

1 Marks: (Book Back)

1. The word comes from the name of a Persian mathematician Abu Ja'far Mohammed ibn-i Musa al Khowarizmi is called?   **[May 2020]**
   (A) Flowchart   (B) Flow   (C) Algorithm (D) Syntax
2. Two main measures for the efficiency of an algorithm are
                                                [May 2020] , [June 2023]
   (A) Processor and memory   (B) Complexity and capacity
   (C) Time and space   (D) Data and space
3. In dynamic programming, the technique of storing the previously calculated values is called?   **March 2023**
          (A) Saving value property   (B)Storing value property
          (C) Memorization   (D) Mapping
4. Which one of the following is not a factor to measure the execution time of an algorithm?   **[Sep 2020]**
          A) Speed of the machine   B) Operating System
          C) Programming language used   D) Selection
===

2 Marks:

1. What is an Algorithm?   **[May 2020]**
2. What is searching? Write its types.   **[May 2020]**
===

3 Marks:

1. List the characteristics of an algorithm.   **[May 2020]**
2. What do you understand by Dynamic programming?
                                                [Sep 2020], [Mar 2023]
===

5 Marks:

1. Discuss about Linear search algorithm.
                          [May 2020],[July 2022], [Mar 2023]
2. What is Binary search? Discuss with example.   **[June 2023]**
3. Explain the Bubble sort algorithm with example.   **[May 2020]**
4. Explain the characteristics of an algorithm.   **[May 2022]**
===

5. PYTHON – VARIABLES AND OPERATORS

1 Marks:

1. Which of the following shortcut is used to create new Python Program?   **[July 2022]**, **[March 2023]**
   a)Ctrl + C   b)Ctrl + F   c)Ctrl + B   d)Ctrl + N
2. This symbol used to print more than one item on a single line
                                                            [July 2022]
   a)Semicolon(;)   b)Dollor($)   c)Comma(,)   d)Colon(:)
3. Which of the following is not a Keyword in Python? **[March 2023]**
   a)break   b)while   c)continue   d)operators
4. Which operator is also called as Comparative operator?
                                                            [May 2022]
   a)Arithmetic   b)Relational   c)Logical   d)Assignment
5. IDLE stands for ___   *(March 2020)*
   a)Internet Development Learning Environment
   b)Integrated Data Learning Environment
   c)Integrated Development Learning Extend
   d)Integrated Development Learning Environment
6. How will you execute python script?   **[Sep 2020]**
   a)Run → Run Module b)Run Module c)F5 d) Option a and c
===

2 Marks:

1. What are the different modes that can be used to test Python Program?   **[May 2022]**
2. Write short notes on Tokens.   **[Sep 2020], [March 2023]**
===

3 Marks:

1. Write short notes on Arithmetic operator with examples.
                                                            [May 2022]
2. What are String literals? Explain.   *[June 2023]*
===

5 Marks:

1. Explain input() and print () functions with examples.
                                          (March 2020), (May 2022)
2. Discuss in detail about Tokens in Python.   **[March 2023]**
3. Explain the various data types in Python.   **[Sep 2020]**
===

Chapter 6 – CONTROL STRUCTURES

1 Marks:

1. How many important control structures are there is Python?
   a)3   b)4   c)5   d)6 **[March 2023]**

2. elif can be considered to be abbreviation of ___ **[May 2022]**
   a)nested if   b)if..else   c)else if   d)if..elif

3. Which is the most comfortable loop? **[July 2022]**
   a)do..while   b)while   c)for   d)elif

3. What is the output of the following snippet? *(March 2020)*

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

   a)8 6 4 2   b)2 4 6 8 10   c)2 4 6 8   d)2 4 6

4. ___ statement is used to skip the remaining part of a loop start with next iteration **[Sep 2022]**
   a)pass   b)break   c)continue   d)for

==

2 Marks:

1. List the control structure in Python. **[June 2023]**

2. Write note on range () in loop**.**
          (March 2020) [July 2022] [March 2023]

==

3 Marks:

1. Write a program to display **[May 2022]**

2. Write note on the if..else structure. **[June 2023]**

3. Write the syntax of while loop**. [July 2022], [March 2023]**

4. List the difference between break and continue statements.
                                  [May 2022]

==

5 Marks:

1. Write a detail note of for loop. **[May 2022], [July 2022]**

2. Write the syntax of if..elif..else statement with expample**.**
                                     [Sep 2020]

3. Write the output for the following program. *(March 2020)*

   Program:
```
        i=1
      while(i<=6):
         for j in range(1,i):
            print(j, end='\t')
```

```
         print(end='\n')
         i+=1
```

4. Write the output for the following program. **[Sep 2020]**

   Program:

   i)   j=15
```
           while(j>=10):
              print(j, end='\t')
              j=j-1
           else:
              print("\n End of the loop")
```
   ii)   k=5
```
           while(k<=9):
              for i in range(1,k):
                 print(i, end= '\t')
           print(end= '\n')
           k=k+1
```

6. Explain the continue statement with example **[March 2023]**

==

Chapter 7 – PYTHON FUNCTIONS

1 Marks:

1. A function which calls itself is called as ___ **[March 2023]**
   a)Built-in   b)Recursion   c)Lambda   d)return

2. Which function is called anonymous un-named function? *[May 2022]*

   a)Lambda   b)Recursion   c)Function   d)define

3. Which of the following keyword is used to begin the function block?
                             [Sep 2020], [July 2022]
   a)define   b)for   c)finally   d)def

4. Evaluate the following function and write the output:
          x=14.4   *(March 2020)*
          print(math.floor(x))
   a)13   b)14   c)15   d)14.3

==

2 Marks:

1. What are the main advantages of function? **[June 2023]**

2. What is meant by scope of variable? Mention it types.
                                   [July 2022]

==

3 Marks:
1. Write the rules of local variable.   *[May 2022]*
2. Write the basic rules for global keyword in Python.   *[July 2022]*
3. Differentiate ceil() and floor() function?   *[March 2023]*
4. Write a Python code to check whether a given year is leap year or not.   **[June 2023]**
5. What is composition in functions?   **[June 2023]**
6. Write down the general syntax of functions in Python.   *[Sep 2020]*
7. How recursive function works?   *(March 2020)*
===

5 Marks: (Book Back)
1. Explain the different types of function with an exa mple.
          [July 2022]
2. Explain the scope of variables with an example.   *[Sep 2020]*
3. Explain the following built-in functions.
          (March 2020), [March 2023]
   (a) id()   (b) chr()   (c) round()   (d) type()   (e)pow()
4. Debug the following Python program to get the given output:
          [Sep 2020]

   x=0
   define add:
   globally x:
   x=x+10
   print("Inside add() function x value is:")
   add
   print("In main x value is:")
===
Chapter 8 – STRINGS AND STRING MANIPULATION
1 Marks:
1. What will be the output off the following code?   *[May 2022]*
        str="Chennai Schools"
        str1[7]="-"
   a)Chennai-Schools   b)Chenna-School
   c)Type error   d)Chennai
2. Which of the following operator is used for concatenation?
          [Sep 2020], [March 2023]
   a)+   b)&   c)*   d)=

3. What is stride?   *[July 2022]*
   a)index value of slide operation b)first argument of slice operation
   c)second argument of slice operation
   d)third argument of slice operation
4. Which of the following is used as placeholders or replacement fields which get replaced along with format() function?   *[June 2023]*
   a){ }   b)< >   c)++   d)^^
5. In Python, ___ is used to display a string multiple number of times.
          [Sep 2020]

   a) multiplication operator(*)   b) + (addition)
   c)- (subtraction)   d)/ (division)
6. What will be the output off the following code?   *(March 2020)*
        str="NEW DELHI"
        str1[3]="-"
   a)NEW-DELHI   b)NE-DELHI   c)NEW DELHI d)Type-Error
===
2 Marks:
1. How will you delete a string in Python?   *[March 2023]*
2. What will be the output of the following Python code?
          [July 2023]

   str1="School"
   print(str1*3)
===
3 Marks:
1. Write a Python program to display the given pattern. *[March 2023]*
   C O M P U T E R
   C O M P U T E
   C O M P U T
   C O M P U
   C O M P
   C O M
   C O
   C
===
5 Marks: (Book Back)
1. Explain about string operators in Python with suitable example.
          [July 2022]

2. What is the use of replace() function in Python?   *[Sep 2020]*

3. What will be the output of the following Python code?
(March 2020), [July 2022]

```
str="COMPUTER SCIENCE"
(a)print(str*2)      (b)print(str[0:7])
```

4. What will be the output of the given Python program?
(Sep 2019)

```
a="Computer-"
b="Science"
x=a[:4]+b[len(b)-3:]
print(x)
```

5. Write the output for the following Python commands.
(March 2020)

```
str1="Welcome to Python"
```
(i)print(str1)   ii)print(str1[11:17])
(iii)print(str1[11:17:2])   (iv)print(str1[::4])
(v)print(str1[::-4])

6. Write a short about the following with suitable examples:
(Sep 2019)

a) capitialize()   (b) swapcase()   c) center()d) islower()
e) title()

===
Chapter 9 – List, Tuples, Sets, Dictionary

1 Marks:

1. Pick odd one in connection with collection data type   *[June 2023]*
   A) List   B) Tuple   C) Dictionary   D) Loop

2. If List=[17,23,41,10] then List.append(32) will result   *[May 2022]*
   A) [32,17,23,41,10]   B) [17,23,41,10,32]
   C) [10,17,23,32,41]   D) [41,32,23,17,10]

3. What will be the result of the following Python code?   *[July 2022]*
   ```
   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]

4. Let setA={3,6,9}, setB={1,3,9}. What will be the result of the following snippet?   *[March 2023]*
   ```
   print(setA|setB)
   ```
   A) {3,6,9,1,3,9}   B) {3,9}   C) {1}   0D) {1,3,6,9}

5. The key in Python, dictionary is specified by ___   *[March 2020]*
   A) =   B) ;   C) +   D) :

6. What will be the output?   *(Sep 2020)*
   ```
   Marks=[20,40,60,80,100]
   print(Marks(-2))
   ```
   A) 60   B) 100   C) 40   D) 80

===
2 Marks:

1. What is set in Python?   *[July 2022]*

===
3 Marks:

1. What are the difference between List and Dictionary?   **[June 2023]**

2. What will be the output of the following code?   **[March 2023]**
   ```
   squares= [x**2 for x in range(1,11)]
   print(squares)
   ```

3. Write down the general syntax of list. With example in Python.
   [Sep 2020]

4. What will be the output of the following code?   **[March 2020]**
   ```
   list= [3**x for x in range(5)]
   print(list)
   ```

===
5 Marks:

1. What the different ways to insert an element in a list. Explain with suitable example.   **[June 2023]**

2. What is the purpose of range( )? Explain with an example.
   [July 2022]

3. What is nested tuple? Explain with an example.
   [July 2022], [March 2023]

4. Explain the different set operations supported by python with suitable example.   **[May 2022], [March 2020], [sep 2020]**

===
Chapter 10 – Python Classes and Objects

1 Marks:

1. Class members are accessed through which operator?
   [March 2020], [July 2022], [March 2023]
   A) &   B) .   C) #   D) %

2. Which of the following method is used as destructor?   *[May 2022]*
   A) __init__()   B) __dest__()   C) __rem__()   D) __del__()

3. Which of the following class declaration is correct?   **[Sep 2020]**
   A) class class_name   B) class class_name<>
   C) class class_name: D) class class_name[]
4. The process of creating an object is called as: *[June 2023]*
   A) Constructor   B) Destructor   C) Initialize   D) Instantiation
===

2 Marks:
1. What is class?   *[March 2023]*
===

3 Marks:
1. What is the output of the following program?   *[July 2022]*
   class Greeting:
        def __init__(self, name):
           self.__name = name
        def display(self):
           print("Good Morning ", self.__name)
   obj=Greeting('Bindu Madhavan')
   obj.display()
2. Write the output of the following program.   **[March 2020]**
   class Hosting:
        def __init__ (self, name):
           self.__name=name
        def display(self):
           print("Welcome to", self.__name)
   obj=Hosting("Python Programming")
   obj.display()
3. Write note on public and private data members in Python.   **[Sep 2020]**
===

5 Marks:
1. Explain about constructors and destructors in Python with suitable example.   *[March 2020] [Sep 2020]*
===

Chapter 11. Database Concepts
1 Marks:
1. A table is known as   *July 2022*
   A) tuple   B) attribute   C) relation   D) entity

---

2. A tuple is also known as   *May 2022*
   A) table   B) row   C) attribute   D) field
3. Which database model represents parent-child relationship?   *March 2023*
   A) Relational   B) Network   C) Hierarchical   D) Object
4. Relational database model was first proposed by __   *Sep 2020*
   A) E F Codd   B) E E Codd   C) E F Cadd   D) E F Codder
5. What symbol is used for SELECT command?   *March 2020*
   A) σ   B) Π   C) X   D) Ω
6. Database nomalization was first proposed by ___   *Sep 2020*
   A) Chen   B) Edgar F Codd   C) Guido Von Rossum   D) None
===

2 Marks:
1. Mention few examples of a database.   *July 2022*
2. What is data consistency?   *June 2023*
3. What is the role of DBA?   *June 2023*
4. Write a note on different types of DBMS users.   *[Sep 2020]*
===

3 Marks:
1. Write down the advantages of DBMS.   *[Sep 2020]*
===

5 Marks:
1. Explain the different types of data model.   *Sep 2020*
2. Explain the different types of relationship mapping. *[Mar 2020]*
3. Differentiate DBMS and RDBMS.   **March 2020, March 2023**
4. Explain the different operators in Relational algebra with suitable examples.   **March 2023**
5. Explain the characteristics of RDBMS.   **July 2022, July 2023**
===

Chapter 12. STRUCTURED QUERY LANGUAGE
1 Marks:
1. The command to delete a table is   *[July 2022, Mar 2023]*
   A) DROP   B) DELETE   C) DELETE ALL   D) ALTER TABLE
2. The clause used to sort data in a database   **May 2020, June 2023**
   A) SORT BY   B) ORDER BY   C) GROUP BY   D) SELECT
3. Which is a Data Control Language?   *Sep 2020*
   A) Alter   B) Grant   C) Truncate   D) Commit
===

2 Marks:

1. Differentiate Unique and Primary Key constraint.   **May 2022**
2. Write the difference between table constraint and column constraint?   **June 2023**

==

3 Marks:

1. Write a SQL statement to modify the student table structure by adding a new field.   *[July 2022]*
2. Write a SQL statement using DISTINCT keyword.   **May 2022**
3. What is ORDER BY and GROUP by clause?   *[Sep 2020]*
4. Write a short note on DELETE, TRUNCATE, DROP command in SQL.   *[Sep 2020]*
5. What is DML?   *[March 2023]*
6. Write the categories of SQL.   **March 2020**
7. Write note on TCL Commands.   **March 2020**

==

5 Marks:

1. Write the different types of constraints and their functions.
                                              [Sep 2020, July 2022]
2. Construct the following SQL statements in the student table-
     (i) SELECT statement using GROUP BY clause.
     (ii) SELECT statement using ORDER BY clause. **May 2022**
3. Write a SQL statement to create a table for employee having any five fields and create a table constraint for the employee table.
                                                    March 2020

==

Chapter 13 – IMPORTING CSV FILES

1 Marks:

Choose the correct answer:

1. A CSV file is also known as __   **March 2020**
    A) Flat File   B) 3D File
    C) String File   D) Random File
2. The expansion of CRLF is   **Sep 2020**
    A) Control Return and Line Feed
    B) Carriage Return and Form Feed
    C) Control Router and Line Feed
    D) Carriage Return and Line Feed

3. Which of the following mode is used when dealing with non-text files like image or exe files?   **[July 2022, March 2023]**
    A) Text mode   B) Binary mode   C) xls mode   D) csv mode
4. The command used to skip a row in a CSV file is   **June 2023**
    A) next()   B) skip()   C) omit()   D) bounce()
5. CSV stands for ___   **[Sep 2020]**
    A) Common Separated Values   B) Common Set Values
    C) Comma Separated Values   D) Common Separated Variable

==

2 Marks:

1. Mention the two ways to read a CSV file using Python.   **[Sep 2020]**
2. Mention the default modes of the File.   **[March 2023]**

==

3 Marks:

1. Write a note on open() function of python. What is the difference between the two methods?   **[July 2022]**
2. Write a Python program to modify an existing file.   **[July 2022]**
3. What is the difference between reader() and DictReader() function?
                                                    [March 2023]

==

5 Marks:

1. Differentiate Excel file and CSV file.   **[Sep 2020], [May 2022]**
2. Tabulate the different mode with its meaning.
                                          [July 2022, June 2023]
3. Write the different methods to read a File in Python.   **[July 2022]**

==

Chapter 14. IMPORTING C++ PROGRAM IN PYTHON

1 Marks:

1. Which of the following is not a scripting language?   **[Sep 2020]**
    A) JavaScript   B) PHP   C) Perl   D) HTML
2. Importing C++ program in a Python program is called **[March 2023]**
    A) Wrapping   B) Downloading
    C) Interconnecting   D) Parsing
3. A framework for interfacing Python and C++ is   **May 2022**
    A) Ctypes   B) SWIG   C) Cython   D) Boost
4. The module which allows you to interface with the Windows operating system is   **June 2023**
    A) OS module   B) sys module

C) csv module   D) getopt module

5. getopt() will return an empty array if there is no error in splitting strings to   **July 2022**
   A) argv variable   B) opt variable
   C) args variable   D) ifile variable

6. Identify the function call statement in the following snippet.
             if __name__ = '__main__':   **[July 2022]**
   A) main(sys.argv[1:])   B) __name__   C) __main__   D) argv

7. Which of the following is not a scripting language?   **[Sep 2020]**
      A) Ruby   B) DBMS   C) PERL   D) Javascript

===

2 Marks:

1. Differentiate compiler and interpreter.   **[July 2022]**
2. Write the expansion of (i) SWIG (ii) MinGW   **March 2020**

===

3 Marks:

1. Differentiate PYTHON and C++   **June 2023**
2. What are the applications of scripting language?   **[Sep 2020]**
3. Identify the module, operator, definition name for the following
                             [July 2022]
           welcome.display()
4. What is sys.argv? What does it contain?   **May 2022**
5. Write the syntax of getopt.getopt method.   **May 2022**
6. Write about the steps of Python program executing C++ program using Control statement.   **March 2023**

===

5 Marks: (Book Back)

1. Write any 5 features of Python.   **March 2020, June 2023**
2. Explain each word of the following command.
   Python <filename.py> -<i> <C++ filename without cpp extension>
                               May 2022
3. Write the syntax for getopt() and explain its arguments and return values.   **[March 2023]**

===

Chapter 15. DATA MANIPULATION THROUGH SQL

1 Marks:

1. Which of the following is an organized collection of data?
                              March 2020
   A) Database   B) DBMS   C) Information   D) Records

2. SQLite falls under which database system?   **May 2022**
   A) Flat file database system   B) Relational Database system
   C) Hierarchical database system D) Object oriented Database system

3. The function that returns the largest value of the selected column is
                            [July 2022] [March 2023]
   A) MAX()   B) LARGE()   C) HIGH()   D) MAXIMUM()

4. The most commonly used statement in SQL is   **June 2023**
   A) cursor   B) select   C) execute   D) commit

5. __ function returns the number of rows in a table satisfying the criteria specified in the WHERE clause. It returns 0 if there were no matching rows   **[Sep 2020]**
   A) max()   B) min()   C) count()   D) sum()

===

2 Marks: (Book Back)

1. What is the advantage of declaring a column as "INTEGER PRIMARY KEY"?   **March 2020**
2. Which method is used to fetch all rows from the database table?
                              [July 2022]

===

3 Marks: (Book Back)

1. Mention the difference between fetchone() and fetchmany()
                 [March 2020] [July 2022] [March 2023]
2. What is the use of Where Clause. Give a python statement Using the where clause.   **May 2022**
3. Write note on max(), min()   **[June 2023]**

===

5 Marks: (Book Back)

1. Write in brief about SQLite and the steps used to use it.
                       [July 2022] [July 2023]

===

Chapter 16. DATA VISUALIZATION USING PYPLOT : LINE CHART, PIE CHART AND BAR CHART

2 Marks: (Book Back)

1. Define: Data Visualization.   **[March 2022]**
2. List the general types of data visualization.
          [March 2020], [Sep 2020], [July 2022], [March 2023]
3. List the types of Visualizations in Matplotlib.   **[Sep 2020]**

XII – COMPUTER SCIENCE   **LESSON WISE & YEAR WISE QUESTIONS**

3 Marks: (Book Back)

1. Write any three uses of data visualization. **[May 2022]**

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5 Marks: (Book Back)

1. Explain the purpose of the following functions: **March 2023**
   a. plt.xlabel b. plt.ylabel c. plt.title d. plt.legend() e. plt.show()
2. Write down the difference between Histogram and Bar graph.

             [March 2023]

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