CHRIST THE KING BOYS MATRIC HR. SEC. SCHOOL, KUMBAKONAM – 612 001.

STD: XII   **MARKS: 70**

SUB: COMPUTER SCIENCE   **TIME: 2.30 MINS**

HALF – YEARLY MODEL QUESTION PAPER – 1

PART – I

I. CHOOSE THE CORRECT ANSWER: **15*1=15**

1. Which of the following functions that retrieve information from the data type?

   a) Constructors   b) Selectors   c) recursive   d)Nested

2. Which of the following is used in programming languages to map the variable and object?

   a) ::   b) :=   c) =   d) ==

3. The _____ prompt indicates that Interpreter is ready to accept instruction.

   a) >>>   b) <<<   c) #   d) <<

4. The complexity of linear search algorithm is _____.

   a) O(n)   b) O(log n)   c) O(n2)   d) O(n log n)

5. How many important control structures are there in Python?

   a) 3   b) 4   c) 5   d) 6

6. Which of the following keyword is used to define the function testpython():?

   a) define   b) pass   c) def   d) while

7. Which of the following formatting character is used to print exponential notation in upper case?

   a) %e   b) %E   c) %g   d) %n

8. The keys in Python, dictionary is specified by _____

   a) =   b) ;   c)+   d) :

9. The process of creating an object is called as _____.

   a) Constructor   b) Destructor   c) Initialize   d) Instantiation

10. A table is known as _____.

    a) tuple   b) attribute   c) relation   d)entity

11. The command to delete a table is _____.

    a) DROP   b) DELETE   c) DELETE ALL   d) ALTER TABLE

12. Making some changes in the data of the existing file or adding more data is called _____.

    a)Editing   b) Appending   c) Modification   d) Alteration

13. A framework for interfacing Python and C++ is _____.

    a) Ctypes   b) SWIG   c) Cython   d) Boost

14. Which of the following is an organized collection of data?

    a) Database   b) DBMS   c) Information   d) Records

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15. Identify the package manager for Python packages, or modules?

a) Matplotlib   b) PIP   c) plt.show()   d) python package

PART – II

II. ANSWER ANY 6 QUESTIONS: (Q.No.20 Compulsory)   **6*2=12**

16. Define Function with respect to Programming Language

17. What is meant by Modular Programming?

18. Define Tokens and its Classification?

19. What is meant by Block and Nested Block?

20. Define floor() and ceil() function with syntax and example

21. Define Nested List

22. How to Create Database?

23. Define MinGW Interface

24. Define Scatter Plot and Box Plot

PART – III

III. ANSWER ANY 6 QUESTIONS: (Q.No.29 Compulsory)   **6*3=18**

25. What are the different ways to access the elements of a list? Give example?

26. State Algorithm vs Program

27. Write the alternate method for If – Else?

28. Write the General format of replace( ) function with example?

29. What is the difference between the List and Dictionary?

30. Differentiate Private and Public Data Members?

31. Define open() method and close() method with an example

32. Define SQL DISTINCT CLAUSE

PART – IV

IV. ANSWER THE FOLLOWING QUESTIONS: **5*5=25**

33. a) What are called Parameters and write a note on

(i) Parameter without Type   (ii) Parameter with Type

[OR]

b) Discuss about Linear search algorithm.

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34. a) Explain input() and print() functions with examples.

[OR]

    b) Write a detail note on for loop

35. a) Explain the scope of variables with an example.

[OR]

    b) What the different ways to insert an element in a list. Explain with suitable example.

36. a) Differentiate DBMS and RDBMS.

[OR]

    b) Write the different types of constraints and their functions.

37. a) Write the rules to be followed to format the data in a CSV file.

[OR]

    b) Explain the various buttons in a matplotlib window.

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HALF – YEARLY MODEL QUESTION PAPER – 2

PART – I

I. CHOOSE THE CORRECT ANSWER: **15*1=15**

1. The small sections of code that are used to perform a particular task is called _____.
   a) Subroutines   b) Files   c) Pseudo code   d) Modules

2. 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

3. Which operator is also called as Conditional operator?
   a) Ternary   b) Relational   c) Logical   d) Assignment

4. 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

5. What plays a vital role in Python programming?
   a) Statements   b) Control   c) Structure   d) Indentation

6. While defining a function which of the following symbol is used?
   a) ; (semicolon)   b) . (dot)   c) : (colon)   d) $ (dollar)

7. Which of the following is used as placeholders or replacement fields which get replaced along with format ( ) function?
   a) { }   b) <>   c) ++   d) ^^

8. Which of the following function is used to count the number of elements in a list?
   a) count()   b) find()   c)len()   d) index()

9. Functions defined inside a class _____.
   a) Functions   b) Module   c) Methods   d) section

10. What is the acronym of DBMS?
    a) Database Management Symbol   b) Database Managing System
    c) Database Management System   d) DataBasic Management System

11. The clause used to sort data in a database _____.
    a) SORT BY   b) ORDER BY   c) GROUP BY   d) SELECT

12. The command used to skip a row in a CSV file is _____.
    a) next()   b) skip()   c) omit()   d) bounce()

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13. What does __name__ contains?

   a) c++ filename   b) main() name   c) python filename   d) os module name

14. 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

15. Which is a python package used for 2D graphics?

   (A) matplotlib.pyplot   b) matplotlib.pip   c) matplotlib.numpy   d) matplotlib.plt

PART – II

II. ANSWER ANY 6 QUESTIONS: (Q.No.20 Compulsory)   **6*2=12**

16. Differentiate Concrete Data type and Abstract Data type?

17. What is meant by Algorithm Strategy and Define Algorithmic Solution

18. Write the Steps to do Dynamic Programming?

19. Write the Syntax with example for If – Else?

20. Write a Python program to illustrate the use of while loop - to print all numbers from 10 to 15?

21. Define the following Built – in String Functions: a) title()   b) swapcase()

22. What are the Advantages of DBMS?

23. What is the Purpose of CSV file?

24. How to create a Database using SQLite?

PART – III

III. ANSWER ANY 6 QUESTIONS: (Q.No.31 Compulsory)   **6*3=18**

25. Why strlen is a pure function?

26. Define Access Control

27. What is meant by Conditional Operator or Ternary Operator with Example?

28. What are the things that need to be noted when defining Functions?

29. Define the following list functions: a) index()   b) reverse()   c) sort()

30. How to create sets using List or Tuple?

31. What is the difference between Python and C++?

32. Write a python program to check whether the given year is leap year or not?

33. Define the following charts: a) Line Chart   b) Bar Chart   c)Pie Chart

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PART – IV

IV. ANSWER THE FOLLOWING QUESTIONS: 5*5=25

34. a) How will you facilitate data abstraction? Explain it with suitable example

[OR]

b) Explain the Characteristics of an Algorithm?

35. a) Describe in detail the procedure Script mode programming.

[OR]

b) Write a detail note on if..else..elif statement with suitable example.

36. a) Explain about string operators in python with suitable example.

[OR]

b) What is the purpose of range( )? Explain with an example.

37. a) Explain the different types of relationship mapping.

[OR]

b) Explain the following DDL Commands: a) ALTER   b) TRUNCATE   c) DROP TABLE

38. a) Write the syntax for getopt() and explain its arguments and return values?

[OR]

b) Explain about the Aggregate Functions in SQL?

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HALF – YEARLY MODEL QUESTION PAPER – 3

PART – I

I. CHOOSE THE CORRECT ANSWER: **15*1=15**

1. Which of the following defines what an object can do?

   a) Operating System   b) Compiler   c) Interface   d) Interpreter

2. 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

3. Which members are accessible from outside the class?

   a) Public members   b) Protected members   c) Secured members   d) Private members

4. _____ symbol is used to print more than one item on a single line.

   a) Semicolon(;)   b) Dollor($)   c) comma(,)   d) Colon(:)

5. 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

6. Which statement is generally used as a placeholder?

   a) Continue   b) Break   c) pass   d) goto

7. A named blocks of code that are designed to do one specific job is called as _____

   a) Loop   b) Branching   c) Function   d) Block

8. The subscript of a string may be _____.

   a) Positive   b) Negative   c) Both (a) and (b)   d) Either (a) or (b)

9. 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]

10. Class members are accessed through _____ operator.

    a) &   b) .   c) #   d) %

11. Which database model represents parent-child relationship?

    a) Relational   b) Network   c) Hierarchical   d) Object

12. Which commands provide definitions for creating table structure, deleting relations, and modifying relation schemas?

    (A) DDL   b) DML   c) DCL   d) DQL

13. Which of the following creates an object which maps data to a dictionary?

    a) listreader()   b) reader()   c) tuplereader()   d) DicReader ()

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14. The expansion of API is _____.

    a) Application Programming Interpreter   b) Application Programming Interface

    c) Application Performing Interface   d) Application Programming Interlink

15. Which of the following clause avoid the duplicate?

    a) Distinct   b) Remove   c) Where   d) GroupBy

PART – II

II. ANSWER ANY 6 QUESTIONS: (Q.No.23 Compulsory)   6*2=12

16. What is meant by Function Specification?

17. Define Scope

18. What are the Key Features of Python?

19. Define the following Functions: a) abs()   b) ord()   c) chr()

20. What is meant by Reverse Indexing?

21. Define Membership Operators

22. What is meant by dialect?

23. What is the difference between csv.reader() and DictReader()?

24. What are the uses of Data Visualization?

PART – III

III. ANSWER ANY 6 QUESTIONS: (Q.No.28 Compulsory)   6*3=18

25. Define Pair and List

26. What are the two different phases of an Algorithm?

27. Define the Following Data Types: a) Integer   b) Floating Point   c) Boolean

28. Using if..else..elif statement write a suitable program to display largest of 3 numbers.

29. List the differences between break and continue statement?

30. Define Subscript and its types

31. What are the types of DML?

32. What are the Applications of Scripting Language?

33. How to display all records using fetchmany() function

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PART – IV

IV. ANSWER THE FOLLOWING QUESTIONS: 5*5=25

34. a) Explain with example Pure and impure functions.

[OR]

b) Explain the types of scopes for variable?

35. a) What is Binary search? Discuss with example.

[OR]

b) Explain the While Loop with Example?

36. a) Explain recursive function with an example.

[OR]

b) Write a program to accept a string and print the number of uppercase, lowercase, vowels, consonants and spaces in the given string.

37. a) Explain the different types of data model.

[OR]

b) Construct the following SQL statements in the student table-

(i) SELECT statement using GROUP BY clause.

(ii) SELECT statement using ORDER BY clause.

38. a) Write a Python program to write a CSV File with custom quotes.

[OR]

b) Explain the purpose of the following functions:

i. plt.xlabel   ii. plt.ylabel   iii. plt.title   iv. plt.legend()   v. plt.show()

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HALF – YEARLY MODEL QUESTION PAPER – 4

PART – I

I. CHOOSE THE CORRECT ANSWER: **15*1=15**

1. The variables in a function definition are called as _____.
   a) Subroutines   b) Function   c) Definition   d) Parameters

2. Which of the following allow naming the various parts of a multi-item object?
   a) Tuples   b) Lists   c) Classes   d) quadrats

3. Which of the following character is used to give comments in Python Program?
   a) #   b) &   c) @   d) $

4. Which of the following is not a stable sorting algorithm?
   a) Insertion sort   b) Selection sort   c) Bubble sort   d) Merge sort

5. 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

6. 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

7. 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

8. 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]

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9. Which of the following is the private class variable?

   a) __num   b) ##num   c) $$num   d) &&num

10. Who is called Father of Relational Database from the following?

    a) Chris Date   b) Hugh Darween   c) Edgar Frank Codd   d) Edgar Frank Cadd

11. Queries can be generated using _____.

    a) SELECT   b) ORDER BY   c) MODIFY   d) ALTER

12. A CSV file is also known as a _____.

    a) Flat File   b) 3D File   c) String File   d) Random File

13. Importing C++ program in a Python program is called _____.

    a) wrapping   b) Downloading   c) Interconnecting d) Parsing

14. SQLite falls under _____ database system.

    a) Flat file database system   b) Relational Database system

    c) Hierarchical database system   d) Object oriented Database system

15. Which key is used to run the module?

    a) F6   b) F4   c) F3   d) F5

PART – II

II. ANSWER ANY 6 QUESTIONS: (Q.No.20 Compulsory)   6*2=12

16. How python represents the private and protected access specifiers?

17. Define Algorithm Analysis and Pseudo code

18. Write a Python program to calculate the sum of numbers 1 to 100?

19. Define Pass Statement with example

20. What is Composition in Functions?

21. What is the use of len() function in Python?

22. Write the Syntax of Class in Python?

23. What are the commonly used interfaces for importing C++ program into Python?

24. How to display a record using fetchone() function

PART – III

III. ANSWER ANY 6 QUESTIONS: (Q.No.26 Compulsory)   6*3=18

25. Define Mapping and Namespaces

26. List some of the Characteristics of an Algorithm?

27. What are Comments and Indentation in Python?

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28. What are the Compound Operators in Python?

29. What happens when we modify Global Variable inside the function?

30. Define format() Function with Example

31. What is BETWEEN and NOT BETWEEN Keywords?

32. Write the Syntax and explain csv.reader() method?

33. Define Data Visualization and write the General Types of Data Visualization?

PART – IV

IV. ANSWER THE FOLLOWING QUESTIONS: **5*5=25**

34. a) Explain with an example interface and implementation.

[OR]

   b) Explain the concept of Dynamic programming with suitable example.

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

[OR]

   b) Explain the different types of function with an example.

36. a) What are the Characteristics of Database Management System?

[OR]

   b) Explain the following DML Commands: a) INSERT INTO   b) DELETE   c) UPDATE

37. a) Tabulate the different mode with its meaning.

[OR]

   b) Write any 5 features of Python.

38. a) Write the differences between Histogram and Bar Graph?

[OR]

   b) Write in brief about SQLite and the steps used to use it.

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HALF – YEARLY MODEL QUESTION PAPER – 5

PART – I

I. CHOOSE THE CORRECT ANSWER: **15*1=15**

1. Containers for mapping names of variables to objects are called _____.

   a) Scope   b) Mapping   c) Binding   d) Namespaces

2. The data type whose representation is unknown are called _____.

   a) Built in data type   b) Derived data type   c) Concrete data type (D) Abstract data type

3. 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

4. Which of the following shortcut is used to create new Python Program?

   a) Ctrl + C   b) Ctrl + F   c) Ctrl + B   d) Ctrl + N

5. Time complexity of bubble sort in best case is _____.

   a) θ (n)   b) θ (nlogn)   c) θ (n2)   d) θ (n(logn) 2)

6. elif can be considered to be abbreviation of _____.

   a) nested if   b) if..else   c) else if   d) if..elif

7. A Function which calls itself is called as _____.

   a) Built-in   b) Recursion   c) Lambda   d) return

8. 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

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

10. A private class variable is prefixed with _____.

    a) __   b) &&   c) ##   d) **

11. What symbol is used for SELECT statement?

    a) σ b) Π c) X   d) Ω

12. 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

13. 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

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14. 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

15. Which of the following executes the SQL command to perform some action?

　a) Execute()　　　　b) Key()　　　　c) Cursor()　　　　d) run()

PART – II

II. ANSWER ANY 6 QUESTIONS: (Q.No.22 Compulsory)　　　　　　　6*2=12

16. Define Subroutines

17. What are Keywords and Boolean Literals in Python?

18. Define Sequential Statement with example.

19. Define the following Built – in String Functions: a) len()　　　　b) capitalize()

20. Define Class in Python

21. What is Data Consistency?

22. Define Dictionary Comprehension

23. What are the ways to read a CSV File?

24. What is use of next() function?

PART – III

III. ANSWER ANY 6 QUESTIONS: (Q.No.31 Compulsory)　　　　　　　6*3=18

25. What are the Characteristics of Interface?

26. Explain the three Asymptotic Notations used to represent the time complexity of Algorithms?

27. How to pass the parameters in Functions?

28. Write a Python Program to check whether the given string is palindrome or not

29. Define the following list functions: a) max()　　　　b) min()　　　　c) sum()

30. What are the SQL Commands which comes under DML?

31. Define COMMIT and TRUNCATE Command

32. What is the difference between Compiler and Interpreter?

33. Define SQL WHERE CLAUSE

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PART – IV

IV. ANSWER THE FOLLOWING QUESTIONS: **5*5=25**

34. a) Write any five benefits in using modular programming.

[OR]

b) Explain the Selection sort algorithm with example.

35. a) Write a program to display Fibonacci series 0 1 1 2 3 4 5…… (upto n terms)

[OR]

b) Explain the following built-in functions.

i) id()   ii) chr()   iii) round()   iv) type()   v) pow()

36. a) Explain the different set operations supported by python with suitable example.

[OR]

b) Explain about string operators in python with suitable example.

37. a) Explain the different operators in Relational algebra with suitable examples.

[OR]

b) Explain the TCL Commands?

38. a) Differentiate Excel file and CSV file.

[OR]

b) 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

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HALF – YEARLY MODEL QUESTION PAPER – 6

PART – I

I. CHOOSE THE CORRECT ANSWER: **15*1=15**

1. Which of the following is a distinct syntactic block?
    a) Subroutines   b) Function   c) Definition   d) Modules

2. 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

3. A sequence of immutable objects is called _____.
    a) Built in   b) List   c) Tuple   d) Derived data

4. Who developed Python?
    a) Ritche   b) Guido Van Rossum   c) Bill Gates   d) Sunder Pitchai

5. If a problem can be broken into sub problems which are reused several times, the problem possesses which property?
    a) Overlapping sub problems b) Optimal substructure c) Memoization   d) Greedy

6. Which is the most comfortable loop?
    a) do..while   b) while   c) for   d) if..elif

7. Which of the following keyword is used to begin the function block?
    a) define   b) for   c) finally   d) def

8. Which of the following is the slicing operator?
    a) { }   b) [ ]   c) <>   d) ( )

9. 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}

10. Which of the following method is automatically executed when an object is created?
    a) __object__( )   b) __del__( )   c) __func__( )   d) __init__( )

11. Relational database model was first proposed by _____.
    a) E F Codd   b) E E Codd   c) E F Cadd   d) E F Codder

12. Which command lets to change the structure of the table?
    a) SELECT   b) ORDER BY   c) MODIFY   d) ALTER

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13. 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

14. 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

15. Which of the following is called the master table?

    a) sqlite_master   b) sql_master   c) main_master   d) master_main

PART – II

II. ANSWER ANY 6 QUESTIONS: (Q.No.19 Compulsory)   **6*2=12**

16. What is the difference between Interface and Implementation?

17. Which strategy is used for program designing? Define that strategy?

18. Write the Syntax with example for Simple – If?

19. What is meant by Parameters and Arguments?

20. Define List Comprehension

21. What are the Advantages of DBMS?

22. What is the difference between the write mode and append mode?

23. Define Normalization

24. What is the difference between Scripting and Programming Languages?

PART – III

III. ANSWER ANY 6 QUESTIONS: (Q.No.28 Compulsory)   **6*3=18**

25. What is the side – effects of Impure Function?

26. What are the two components of Space Complexity?

27. What are the two types of Programming in Python?

28. Write the alternate method for If – Else?

29. Define the following Built – in String Functions: a) isalnum()   b) isalpha()   c) isdigit()

30. Explain Cartesian Product with a suitable example?

31. Define CSV File. What are the ways to read a CSV File?

32. Write a Python Program to display the content of tuples in newline without using loops?

33. Define SQL ORDER by CLAUSE

CHRIST THE KING BOYS MATRIC HR. SEC. SCHOOL, KUMBAKONAM – 612 001.

PART – IV

IV. ANSWER THE FOLLOWING QUESTIONS: 5*5=25

34. a) What is a List? Why List can be called as Pairs. Explain with suitable example

[OR]

b) Explain the Insertion sort algorithm with example.

35. a) Explain the Following Operators with Example:

   i) Arithmetic   ii) Relational   iii) Logical   iv) Conditional

[OR]

b) Write a Python code to find the L.C.M. of two numbers.

36. a) Explain the different set operations supported by python with suitable example.

[OR]

b) What are the Components of DBMS?

37. a) Write the syntax for getopt() and explain its arguments and return values

[OR]

b) Write the rules to be followed to format the data in a CSV file.

38. a) What are the components of SQL? Write the commands in each.

[OR]

b) Explain in detail the types of pyplots using Matplotlib.

// ALL THE BEST