

- 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 is a unit of code that is often defined within a greater code structure?  
(a) Subroutines (b) Function (c) Files (d) Modules
- 3) Which of the following is a distinct syntactic block?  
(a) Subroutines (b) Function (c) Definition (d) Modules
- 4) The variables in a function definition are called as  
(a) Subroutines (b) Function (c) Definition (d) Parameters
- 5) The values which are passed to a function definition are called  
(a) Arguments (b) Subroutines (c) Function (d) Definition
- 6) 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
- 7) Which of the following defines what an object can do?  
(a) Operating System (b) Compiler (c) Interface (d) Interpreter
- 8) Which of the following carries out the instructions defined in the interface?  
(a) Operating System (b) Compiler (c) Implementation (d) Interpreter
- 9) 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
- 10) The functions which cause side effects to the arguments passed are called  
(a) impure function (b) Partial Functions (c) Dynamic Functions  
(d) Pure functions
- 11) Which of the following functions that build the abstract data type?  
(a) Constructors (b) Destructors (c) recursive (d) Nested
- 12) Which of the following functions that retrieve information from the data type?  
(a) Constructors (b) Selectors (c) recursive (d) Nested
- 13) The data structure which is a mutable ordered sequence of elements is called  
(a) Built in (b) List (c) Tuple (d) Derived data
- 14) A sequence of immutable objects is called  
(a) Built in (b) List (c) Tuple (d) Derived data
- 15) The data type whose representation is known are called  
(a) Built in datatype (b) Derived datatype (c) Concrete datatype  
(d) Abstract datatype
- 16) The data type whose representation is unknown are called  
(a) Built in datatype (b) Derived datatype (c) Concrete datatype  
(d) Abstract datatype

- 17) Which of the following is a compound structure?  
(a) Pair (b) Triplet (c) single (d) quadrat
- 18) Bundling two values together into one can be considered as  
(a) Pair (b) Triplet (c) single (d) quadrat
- 19) Which of the following allow to name the various parts of a multi-item object?  
(a) Tuples (b) Lists (c) Classes (d) quadrats
- 20) Which of the following is constructed by placing expressions within square brackets?  
(a) Tuples (b) Lists (c) Classes (d) quadrats
- 21) 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
- 22) The process of binding a variable name with an object is called  
(a) Scope (b) Mapping (c) late binding (d) early binding
- 23) Which of the following is used in programming languages to map the variable and object?  
(a) :: (b) := (c) = (d) ==
- 24) Containers for mapping names of variables to objects is called  
(a) Scope (b) Mapping (c) Binding (d) Namespaces
- 25) Which scope refers to variables defined in current function?  
(a) Local Scope (b) Global scope (c) Module scope (d) Function Scope
- 26) 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
- 27) 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
- 28) 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
- 29) Which members are accessible from outside the class?  
(a) Public members (b) Protected members (c) Secured members  
(d) Private members
- 30) 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
- 31) The word comes from the name of a Persian mathematician Abu Ja'far Mohammed ibn-i Musa al Khwarizmi is called?  
(a) Flowchart (b) Flow (c) Algorithm (d) Syntax
- 32) 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

- 33) 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
- 34) The complexity of linear search algorithm is  
(a)  $O(n)$  (b)  $O(\log n)$  (c)  $O(n^2)$  (d)  $O(n \log n)$
- 35) From the following sorting algorithms which has the lowest worst case complexity?  
(a) Bubble sort (b) Quick sort (c) Merge sort (d) Selection sort
- 36) Which of the following is not a stable sorting algorithm?  
(a) Insertion sort (b) Quick sort (c) Merge sort (d) Selection sort
- 37) Time complexity of bubble sort in best case is  
(a)  $\theta(n)$  (b)  $\theta(n \log n)$  (c)  $\theta(n^2)$  (d)  $\theta(n(\log n)^2)$
- 38) The  $\Theta$  notation in asymptotic evaluation represents  
(a) Base case (b) Average case (c) Worst case (d) NULL case
- 39) 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
- 40) 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
- 41) Who developed Python?  
(a) Ritchie (b) Guido Van Rossum (c) Bill Gates (d) Sunder Pitchai
- 42) The Python prompt indicates that Interpreter is ready to accept instruction.  
(a) `>>>` (b) `<<<` (c) `#` (d) `<<`
- 43) Which of the following shortcut is used to create new Python Program?  
(a) `Ctrl + C` (b) `Ctrl + F` (c) `Ctrl + B` (d) `Ctrl + N`
- 44) Which of the following character is used to give comments in Python Program?  
(a) `#` (b) `&` (c) `@` (d) `$`
- 45) This symbol is used to print more than one item on a single line.  
(a) Semicolon(`;`) (b) Dollar(`$`) (c) comma(`,`) (d) Colon(`:`)
- 46) Which of the following is not a token?  
(a) Interpreter (b) Identifiers (c) Keyword (d) Operators
- 47) Which of the following is not a Keyword in Python?  
(a) `break` (b) `while` (c) `continue` (d) `operators`
- 48) Which operator is also called as Comparative operator?  
(a) Arithmetic (b) Relational (c) Logical (d) Assignment
- 49) Which of the following is not Logical operator?  
(a) `and` (b) `or` (c) `not` (d) Assignment
- 50) Which operator is also called as Conditional operator?  
(a) Ternary (b) Relational (c) Logical (d) Assignment
- 51) How many important control structures are there in Python?  
(a) 3 (b) 4 (c) 5 (d) 6

- 52) elif can be considered to be abbreviation of  
(a) nested if (b) if..else (c) else if (d) if..elif
- 53) What plays a vital role in Python programming?  
(a) Statements (b) Control (c) Structure (d) Indentation
- 54) Which statement is generally used as a placeholder?  
(a) continue (b) break (c) pass (d) goto
- 55) 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
- 56) Which is the most comfortable loop?  
(a) do..while (b) while (c) for (d) if..elif
- 57) 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
- 58) What is the output of the following snippet?  
T=1  
while T:  
print(True)  
break  
(a) False (b) True (c) 0 (d) 1
- 59) Which amongst this is not a jump statement?  
(a) for (b) goto (c) continue (d) break
- 60) Which punctuation should be used in the blank?  
if < condition > \_\_\_\_  
statements-block 1  
else:  
statements-block 2  
(a) ; (b) :: (c) ! (d) ":"
- 61) A named blocks of code that are designed to do one specific job is called as  
(a) Loop (b) Branching (c) Function (d) Block
- 62) A Function which calls itself is called as  
(a) Built-in (b) Recursion (c) Lambda (d) return
- 63) Which of the following keyword is used to begin the function block?  
(a) define (b) for (c) finally (d) def
- 64) Which function is called anonymous un-named function  
(a) Lambda (b) Recursion (c) Function (d) define
- 65) Which of the following keyword is used to exit a function block?  
(a) define (b) return (c) finally (d) def
- 66) While defining a function which of the following symbol is used.  
(a) ; (semicolon) (b) . (dot) (c) : (colon) (d) \$ (dollar)
- 67) In which arguments the correct positional order is passed to a function?  
(a) Required (b) Keyword (c) Default (d) Variable-length

- 68) 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
- 69) 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)  $x\%4=0$
- 70) Which of the following keyword is used to define the function testpython(): ?  
(a) define (b) pass (c) def (d) while
- 71) 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
- 72) 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
- 73) Which of the following operator is used for concatenation?  
(a) + (b) & (c) \* (d) =
- 74) Defining strings within triple quotes allows creating:  
(a) Single line Strings (b) Multiline Strings (c) Double line Strings  
(d) Multiple Strings
- 75) Strings in python:  
(a) Changeable (b) Mutable (c) Immutable (d) flexible
- 76) Which of the following is the slicing operator?  
(a) {} (b) [] (c) < > (d) ( )
- 77) 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
- 78) Which of the following formatting character is used to print exponential notation in upper case?  
(a) %e (b) %E (c) %g (d) %n
- 79) Which of the following is used as placeholders or replacement fields which get replaced along with format( ) function?  
(a) {} (b) < > (c) ++ (d) ^^
- 80) The subscript of a string may be:  
(a) Positive (b) Negative (c) Both (a) and (b) (d) Either (a) or (b)
- 81) Pick odd one in connection with collection data type  
(a) List (b) Tuple (c) Dictionary (d) Loop
- 82) Let list1=[2,4,6,8,10], then print(List1[-2]) will result in  
(a) 10 (b) 8 (c) 4 (d) 6
- 83) Which of the following function is used to count the number of elements in a list?  
(a) count() (b) find() (c) len() (d) index())

- 84) 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]
- 85) 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]
- 86) 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()
- 87) 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]
- 88) 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.
- 89) 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.
- 90) 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}
- 91) 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
- 92) The keys in Python, dictionary is specified by  
(a) = (b) ; (c) + (d) ":"
- 93) 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
- 94) Functions defined inside a class:  
(a) Functions (b) Module (c) Methods (d) section
- 95) Class members are accessed through which operator?  
(a) & (b) . (c) # (d) %
- 96) Which of the following method is automatically executed when an object is created?  
(a) \_\_object\_\_() (b) \_\_del\_\_() (c) \_\_func\_\_() (d) \_\_init\_\_()
- 97) A private class variable is prefixed with  
(a) \_\_ (b) && (c) ## (d) \*\*
- 98) Which of the following method is used as destructor?  
(a) \_\_init\_\_() (b) \_\_dest\_\_() (c) \_\_rem\_\_() (d) \_\_del\_\_()

99) Which of the following class declaration is correct?

- (a) class class\_name (b) class class\_name< > (c) class class\_name:
- (d) class class\_name[ ]

100) Which of the following is the output of the following program?

```
class Student:
def __init__(self, name):
self.name=name
print (self.name)
S=Student("Tamil")
```

- (a) Error (b) Tamil (c) name (d) self

101) Which of the following is the private class variable?

- (a) \_\_num (b) ##num (c) \$\$num (d) &&num

102) The process of creating an object is called as:

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

103) What is the acronym of DBMS?

- (a) DataBase Management Symbol (b) Database Managing System
- (c) DataBase Management System (d) DataBasic Management System

104) A table is known as

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

105) Which database model represents parent-child relationship?

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

106) Relational database model was first proposed by

- (a) E F Codd (b) E E Codd (c) E F Cadd (d) E F Codder

107) What type of relationship does hierarchical model represents?

- (a) one-to-one (b) one-to-many (c) many-to-one (d) many-to-many

108) Who is called Father of Relational Database from the following?

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

109) Which of the following is an RDBMS?

- (a) Dbase (b) Foxpro (c) Microsoft Access (d) SQLite

110) What symbol is used for SELECT statement?

- (a)  $\sigma$  (b)  $\Pi$  (c) X (d)  $\Omega$

111) A tuple is also known as

- (a) table (b) row (c) attribute (d) field

112) Who developed ER model?

- (a) Chen (b) EF Codd (c) Chend (d) Chand

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

- (a) DDL (b) `DML (c) DCL (d) DQL

114) Which command lets to change the structure of the table?

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

115) The command to delete a table is

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

116) Queries can be generated using

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

117) The clause used to sort data in a database

- (a) SORT BY (b) ORDER BY (c) GROUP BY (d) SELECT

118) A CSV file is also known as a ....

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

119) 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

120) 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

121) 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

122) The command used to skip a row in a CSV file is

- (a) next() (b) skip() (c) omit() (d) bounce()

123) 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

124) 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

mumbai,andheri

- (a) chennai,mylapore (b) mumbai,andheri (c) chennai,mumba

- (d) chennai,mylapore,mumbai,andheri

125) Which of the following creates an object which maps data to a dictionary?

- (a) listreader() (b) reader() (c) tuplereader() (d) DictReader ()

126) Making some changes in the data of the existing file or adding more data is called

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

127) 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,diaclet='M')
```

```
wr.writerows(D)
```

```
f.close()
```

- (a) Exam Quarterly Halfyearly (b) Exam Quarterly Halfyearly (c) E, Q, H

- (d) Exam, Quarterly, Halfyearly

128) Which of the following is not a scripting language?

- (a) JavaScript (b) PHP (c) Perl (d) HTML

129) Importing C++ program in a Python program is called

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



130) The expansion of API is

- (a) Application Programming Interpreter (b) Application Programming Interface
- (c) Application Performing Interface (d) Application Programming Interlink

131) A framework for interfacing Python and C++ is

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

132) 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

133) 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

134) 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

135) 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

136) Which of the following can be used for processing text, numbers, images, and scientific data?

- (a) HTML (b) C (c) C++ (d) PYTHON

137) What does \_\_name\_\_ contains?

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

138) Which of the following is an organized collection of data?

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

139) SQLite falls under which database system?

- (a) Flat file database system (b) Relational Database system
- (c) Hierarchical database system (d) Object oriented Database system

140) 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

141) Any changes made in the values of the record should be saved by the command

- (a) Save (b) Save As (c) Commit (d) Oblige

142) Which of the following executes the SQL command to perform some action?

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

143) 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()

144) The function that returns the largest value of the selected column is

- (a) MAX() (b) LARGE() (c) HIGH() (d) MAXIMUM()

145) Which of the following is called the master table?

- (a) sqlite\_master (b) sql\_master (c) main\_master (d) master\_main

146) The most commonly used statement in SQL is

- (a) cursor (b) select (c) execute (d) commit

147) Which of the following clause avoids the duplicate?

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

148) Which is a python package used for 2D graphics?

- (a) matplotlib.pyplot (b) matplotlib.pip (c) matplotlib.numpy (d) matplotlib.plt

149) Identify the package manager for Python packages, or modules.

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

150) 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

151) 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

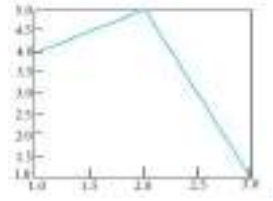
- (a) List installed packages (b) list command (c) Install PIP (d) packages installed

152) 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

153) Observe the output figure. Identify the coding for obtaining this output.

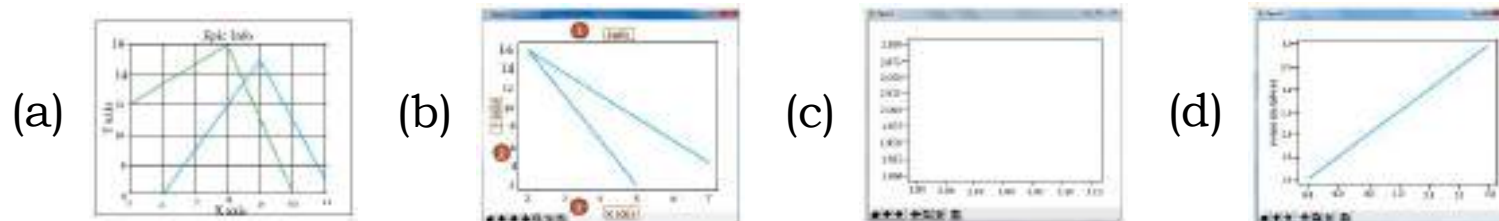


- |  |  |
|--|--|
| (a) import matplotlib.pyplot as plt<br>plt.plot([1,2,3],[4,5,1])<br>plt.show() | (b) import matplotlib.pyplot as plt<br>plt.plot([1,2],[4,5])<br>plt.show() |
| (c) import matplotlib.pyplot as plt<br>plt.plot([2,3],[5,1])<br>plt.show()     | (d) import matplotlib.pyplot as plt<br>plt.plot([1,3],[4,1])<br>plt.show() |

154) Read the code:

- a. import matplotlib.pyplot as plt  
b. plt.plot(3,2)  
c. plt.show()

Identify the output for the above coding



155) Which key is used to run the module?

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

156) 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

157) 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

83 x 2 = 166

158) What is a subroutine?

159) Define Function with respect to Programming language.

160) Write the inference you get from `X := (78)`.

161) Differentiate interface and implementation.

162) Which of the following is a normal function definition and which is recursive function definition

i) let sum x y:

    return x + y

ii) let disp:

    print 'welcome'

iii) let rec sum num:

    if (num!=0) then return num + sum (num-1)

    else

        return num

163) What is abstract data type?

164) Differentiate constructors and selectors.

165) What is a Pair? Give an example.

166) What is a List? Give an example.

167) What is a Tuple? Give an example.

168) What is a scope?

169) Why scope should be used for variable. State the reason.

170) What is Mapping?

171) What do you mean by Namespaces?

172) How Python represents the private and protected Access specifiers?

173) What is an Algorithm?

174) Define Pseudo code.

175) Who is an Algorist?

176) What is Sorting?

177) What is searching? Write its types.

178) What are the different modes that can be used to test Python Program?

179) Write short notes on Tokens.

180) What are the different operators that can be used in Python?

181) What is a literal? Explain the types of literals?

182) Write short notes on Exponent data?

183) List the control structures in Python.

184) Write note on break statement.

185) Write is the syntax of if..else statement.

186) Define control structure.

187) Write note on range () in loop.

188) What is function?

189) Write the different types of function.

190) What are the main advantages of function?

- 191) What is meant by scope of variable? Mention its types.
- 192) Define global scope.
- 193) What is base condition in recursive function.
- 194) How to set the limit for recursive function? Give an example.
- 195) What is String?
- 196) Do you modify a string in Python?
- 197) How will you delete a string in Python?
- 198) What will be the output of the following python code?
- ```
str1 = "School"
print(str1*3)
```
- 199) What is slicing?
- 200) What is List in Python?
- 201) How will you access the list elements in reverse order?
- 202) What will be the value of x in following python code?
- ```
List 1 = [2, 4, 6[1, 3, 5]]
x = len (List 1)
```
- 203) Differentiate del with remove( ) function of List.
- 204) Write the syntax of creating a Tuple with n number of elements.
- 205) What is set in Python?
- 206) What is class?
- 207) What is instantiation?
- 208) 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)
```
- 209) How will you create constructor in Python?
- 210) What is the purpose of Destructor?
- 211) Mention few examples of a database.
- 212) List some examples of RDBMS.
- 213) What is data consistency?
- 214) What is the difference between Hierarchical and Network data model?
- 215) What is normalization?
- 216) Write a query that selects all students whose age is less than 18 in order wise.
- 217) Differentiate Unique and Primary Key constraint
- 218) Write the difference between table constraint and column constraint?
- 219) Which component of SQL lets insert values in tables and which lets to create a table?
- 220) What is the difference between SQL and MYSQL?
- 221) What is CSV File?
- 222) Mention the two ways to read a CSV file using Python.
- 223) Mention the default modes of the File.
- 224) What is use of next() function?
- 225) How will you sort more than one column from a csv file?Give an example statement.
- 226) What is the theoretical difference between Scripting language and other programming language?

- 227) Differentiate compiler and interpreter.
- 228) Write the expansion of (i) SWIG (ii) MinGW
- 229) What is the use of modules?
- 230) What is the use of cd command. Give an example.
- 231) Mention the users who uses the Database.
- 232) Which method is used to connect a database? Give an example.
- 233) What is the advantage of declaring a column as "INTEGER PRIMARY KEY"
- 234) Write the command to populate record in a table. Give an example.
- 235) Which method is used to fetch all rows from the database table?
- 236) Define: Data Visualization.
- 237) List the general types of data visualization.
- 238) List the types of Visualizations in Matplotlib.
- 239) How will you install Matplotlib?
- 240) Write the difference between the following functions: plt.plot([1,2,3,4]),  
plt.plot([1,2,3,4], [1,4,9,16]).

83 x 3 = 249

- 241) Mention the characteristics of Interface.
- 242) Why strlen is called pure function?
- 243) What is the side effect of impure function. Give example.
- 244) Differentiate pure and impure function.
- 245) What happens if you modify a variable outside the function? Give an example.
- 246) Differentiate Concrete data type and abstract datatype.
- 247) Which strategy is used for program designing? Define that Strategy.
- 248) Identify Which of the following are constructors and selectors?
- (a) N1=number()
  - (b) accetnum (n1)
  - (c) display num (n1)
  - (d) eval (a/b)
  - (e) x,y= make slope (m), make slope (n)
  - (f) display()
- 249) What are the different ways to access the elements of a list. Give example.
- 250) Identify Which of the following are List, Tuple and class ?
- (a) arr [1, 2, 3, 4]
  - (b) arr (1, 2, 3, 4)
  - (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]
- 251) Define Local scope with an example.
- 252) Define Global scope with an example.
- 253) Define Enclosed scope with an example.
- 254) Why access control is required?

255) Identify the scope of the variables in the following pseudo code and write its output

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

256) List the characteristics of an algorithm.

257) Discuss about Algorithmic complexity and its types.

258) What are the factors that influence time and space complexity.

259) Write a note on Asymptotic notation.

260) What do you understand by Dynamic programming?

261) Write short notes on Arithmetic operator with examples.

262) What are the assignment operators that can be used in Python?

263) Explain Ternary operator with examples.

264) Write short notes on Escape sequences with examples.

265) What are string literals? Explain.

266) Write a program to display

```
A
A B
A B C
A B C D
A B C D E
```

267) Write note on if..else structure.

268) Using if..else..elif statement write a suitable programs to display largest of 3 numbers.

269) Write the syntax of while loop.

270) List the differences between break and continue statements.

271) Write the rules of local variable.

272) Write the basic rules for global keyword in python.

273) What happens when we modify global variable inside the function?

274) Differentiate ceil() and floor() function?

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

276) What is composition in functions?

277) How recursive function works?

278) What are the points to be noted while defining a function?

279) Write a Python program to display the given pattern

```
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
```

280) Write a short about the followings with suitable example:

(a) capitalize( )

(b) swapcase( )

281) What will be the output of the given python program?

```
str1 = "welcome"
```

```
str2 = "to school"
```

```
str3 = str1[:2] + str2[len(str2)-2:]
```

```
print (str3)
```

282) What is the use of format( )? Give an example.

283) Write a note about count( ) function in python.

284) What are the advantages of Tuples over a list?

285) Write a shot note about sort( ).

286) What will be the output of the following code?

```
list = [2**x for x in range(5)]
```

```
print (list)
```

287) Explain the difference between del and clear( ) in dictionary with an example.

288) List out the set operations supported by python.

289) What are the difference between List and Dictionary?

290) What are class members? How do you define it?

291) Write a class with two private class variables and print the sum using a method.

292) 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')
```

```
del F.display
```

```
F.display()
```

293) 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()
```

294) How to define constructor and destructor in Python?

295) What is the difference between Select and Project command?

296) What is the role of DBA?

297) Explain Cartesian Product with a suitable example.

298) Explain Object Model with example.

299) Write a note on different types of DBMS users.

300) What is a constraint? Write short note on Primary key constraint.

301) Write a SQL statement to modify the student table structure by adding a new field.

302) Write any three DDL commands.

303) Write the use of Savepoint command with an example.

304) Write a SQL statement using DISTINCT keyword.

305) Write a note on open() function of python. What is the difference between the two methods?



- 306) Write a Python program to modify an existing file.
- 307) Write a Python program to read a CSV file with default delimiter comma (,).
- 308) What is the difference between the write mode and append mode.
- 309) What is the difference between reader() and DictReader() function?
- 310) Differentiate PYTHON and C++.
- 311) What are the applications of scripting language?
- 312) What is MinGW? What is its use?
- 313) Identify the module, operator, definition name for the following  
welcome.display().
- 314) What is sys.argv? What does it contain?
- 315) What is SQLite? What is its advantage?
- 316) Mention the difference between fetchone() and fetchmany()
- 317) What is the use of Where Clause. Give a python statement Using the where clause.
- 318) 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
- 319) 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
- 320) 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 in Another Line! Whoa')  
plt.show()
- 321) Write any three uses of data visualization.
- 322) 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.
- 323) Write the plot for the following pie chart output.



61 x 5 = 305

- 324) What are called Parameters and write a note on  
(i) Parameter without Type  
(ii) Parameter with Type



325) Identify in the following program

```
let rec gcd a b:=  
    if b < > 0 then gcd b (a mod b)  
    else return a:
```

i) Name of the function

ii) Identify the statement which tells it is a recursive function

iii) Name of the argument variable

iv) Statement which invoke the function recursively

v) Statement which terminates the recursion

326) Explain with example Pure and impure functions.

327) Explain with an example interface and implementation.

328) How will you facilitate data abstraction. Explain it with suitable example.

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

330) How will you access the multi-item. Explain with example.

331) Explain the types of scopes for variable or LEGB rule with example.

332) Write any Five Characteristics of Modules.

333) Write any five benefits in using modular programming.

334) Explain the characteristics of an algorithm.

335) Discuss about Linear search algorithm.

336) What is Binary search? Discuss with example

337) Explain the Bubble sort algorithm with example.

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

339) Describe in detail the procedure Script mode programming.

340) Explain input() and print() functions with examples.

341) Discuss in detail about Tokens in Python.

342) Write a detail note on for loop.

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

344) Write a program to display all 3 digit odd numbers.

345) Write a program to display multiplication table for a given number.

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

347) Explain the scope of variables with an example.

348) Explain the following built-in functions.

(a) id ()

(b) chr ()

(c) round ()

(d) type ()

(e) pow ()

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

350) Explain recursive function with an example.

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

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

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

354) What is nested tuple? Explain with an example.

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

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

357) Explain the different types of data model.

358) Explain the different types of relationship mapping.

359) Differentiate DBMS and RDBMS.

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

361) Explain the characteristics of DBMS.

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

363) Consider the following employee table. Write SQL commands for the qtns.(i) to (v).

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

(i) To display the details of all employees in descending order of pay.

(ii) To display all employees whose allowance is between 5000 and 7000.

(iii) To remove the employees who are mechanic.

(iv) To add a new row.

(v) To display the details of all employees who are operators.

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

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

(i) SELECT statement using GROUP BY clause.

(ii) SELECT statement using ORDER BY clause.

366) Write a SQL statement to create a table for employee having any five fields and create a table constraint for the employee table.

367) Differentiate Excel file and CSV file.

368) Tabulate the different mode with its meaning.

369) Write the different methods to read a File in Python.

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

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

372) Write any 5 features of Python.

373) Explain each word of the following command.

Python < filename.py > - < i > < C++ filename without cpp extension >

374) What is the purpose of sys, os, getopt module in Python.Explain.

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

376) 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

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

378) 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   |

379) hat is the use of HAVING clause. Give an example python script

380) 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 :-

|                    |                                          |
|--------------------|------------------------------------------|
| <b>I code</b>      | <b>:- Integer and act as primary key</b> |
| Item Name          | :- Character with length 25              |
| Rate               | :- Integer                               |
| Record to be added | :- 1008, Monitor, 15000                  |

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

| <b>SUPPLIER</b> |             |             |              |                |
|-----------------|-------------|-------------|--------------|----------------|
| <b>Suppno</b>   | <b>Name</b> | <b>City</b> | <b>Icode</b> | <b>SuppQty</b> |
| 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

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

383) Explain the various buttons in a matplotlib window.

384) Explain the purpose of the following functions:

- plt.xlabel
- plt.ylabel
- plt.title
- plt.legend()
- plt.show()

\*\*\*\*\*