PUGAL

+2 COMPUTER SCIENCE

2, 3 & 5 MARK QUESTION BANK

Name   **:**

STD   **:** XII ᵗʰ STD

Subject **:**   Computer Science

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CHAPTER 1

Part - II

Answer the following questions (2 Marks)

1. What is a subroutine?

2. Define Function with respect to Programming language.

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

4. Differentiate interface and implementation.

5. Which of the following is a normal function definition and which is recursive function definition

i) let rec sum x y:

return x + y

ii) let disp :

print 'welcome'

iii) let rec sum num:

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

else

return num

Part - III

Answer the following questions (3 Marks)

1. Mention the characteristics of Interface.

2. Why strlen is called pure function?

3. What is the side effect of impure function. Give example.

4. Differentiate pure and impure function.

5. Wha happens if you modify a variable outside the function? Give an example.

Part - IV

Answer the following questions (5Marks)

1. What are called Parameters and write a note on

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

2. 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

3. Explain with example Pure and impure functions.

4. Explain with an example interface and implementation.

CHAPTER 2

Part - II

Answer the following questions (2 Marks)

1. What is abstract data type?

2. Differentiate constructors and selectors.

3. What is a Pair? Give an example.

4. What is a List? Give an example.

5. What is a Tuple? Give an example.

Part - III

1. Differentiate Concrete data type and abstract datatype.

2. Which strategy is used for program designing? Define that Strategy.

3. Identify Which of the following are constructors and selectors?

   (a) N1=number() (b) accetnum(n1) (c) displaynum(n1)

   (d) eval(a/b) (e) x,y= makeslope (m), makeslope(n)

   (f) display()

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

5. Identify Which of the following are List, Tuple and class ?

   (a) arr [1, 2, 34] (b) arr (1, 2, 34) (c) student [rno, name, mark]

   (d) day= ('sun', 'mon', 'tue', 'wed') (e) x= [2, 5, 6.5, [5, 6], 8.2]

                         (f) employee [eno, ename, esal, eaddress]

Part - IV

Answer the following questions (5Marks)

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

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

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

CHAPTER 3

Part - II

Answer the following questions (2 Marks)

1. What is a scope?

2. Why scope should be used for variable. State the reason.

3. What is Mapping?

4. What do you mean by Namespaces?

5. How Python represents the private and protected Access specifiers?

Part - III

Answer the following questions (3 Marks)

1. Define Local scope with an example.

2. Define Global scope with an example.

3. Define Enclosed scope with an example.

4. Why access control is required?

5. Identify the scope of the variables in the following pseudo code and write its

output

color:= Red

mycolor():

b:=Blue

myfavcolor():

g:=Green

printcolor, b, g

myfavcolor()

printcolor, b

mycolor()

print color

Part - IV

Answer the following questions (5Marks)

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

2. Write any Five Characteristics of Modules.

3. Write any five benefits in using modular programming.

CHAPTER 4

Part - II

Answer the following questions (2 Marks)

1. What is an Algorithm?

2. Define Pseudo code.

3. Who is an Algorist?

4. What is Sorting?

5. What is searching? Write its types.

Part - III

Answer the following questions (3 Marks)

1. List the characteristics of an algorithm.

2. Discuss about Algorithmic complexity and its types.

3. What are the factors that influence time and space complexity.

4. Write a note on Asymptotic notation.

5. What do you understand by Dynamic programming?

Part - IV

Answer the following questions (5Marks)

1. Explain the characteristics of an algorithm.

2. Discuss about Linear search algorithm.

3. What is Binary search? Discuss with example.

4. Explain the Bubble sort algorithm with example.

5. Explain the concept of Dynamic programming with suitable example.

CHAPTER 5
Part - II

Answer the following questions : (2 Marks)

1. What are the different modes that can be used to test Python Program ?

2. Write short notes on Tokens.

3. What are the different operators that can be used in Python ?

4. What is a literal? Explain the types of literals ?

5. Write short notes on Exponent data?

Part - III

Answer the following questions : (3 Marks)

1. Write short notes on Arithmetic operator with examples.

2. What are the assignment operators that can be used in Python?

3. Explain Ternary operator with examples.

4. Write short notes on Escape sequences with examples.

5. What are string literals? Explain.

Part - IV

Answer the following questions : (5 Marks)

1. Describe in detail the procedure Script mode programming.

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

3. Discuss in detail about Tokens in Python

CHAPTER 6
Part -II

Answer the following questions 2 Marks

1. List the control structures in Python.

2. Write note on break statement.

3. Write is the syntax of if..else statement

4. Define control structure.

5. Write note on range () in loop

Part -III

Answer the following questions 3 Marks

1. Write a program to display

A

A B

A B C

A B C D

A B C D E

2. Write note on if..else structure.

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

4. Write the syntax of while loop.

5. List the differences between break and continue statements.

Part -IV

Answer the following questions 5 Marks

1. Write a detail note on for loop

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

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

4. Write a program to display multiplication table for a given number.

CHAPTER 7
Part - II

Answer the following questions: (2 Marks)

1. What is function?

2. Write the different types of function.

3. What are the main advantages of function?

4. What is meant by scope of variable? Mention its types.

5. Define global scope.

6. What is base condition in recursive function

7. How to set the limit for recursive function? Give an example.

Part - III

Answer the following questions: (3 Marks)

1. Write the rules of local variable.

2. Write the basic rules for global keyword in python.

3. What happens when we modify global variable inside the function?

4. Differentiate ceil() and floor() function?

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

6. What is composition in functions?

7. How recursive function works?

8. What are the points to be noted while defining a function?

Part - IV

Answer the following questions: (5 Marks)

1. Explain the different types of function with an example.

2. Explain the scope of variables with an example.

3. Explain the following built-in functions.

(a) id()

(b) chr()

(c) round()

(d) type()

(e) pow()

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

5. Explain recursive function with an example.

CHAPTER 8
Part -II

Answer the following questions (2 Marks)

1. What is String?

2. Do you modify a string in Python?

3. How will you delete a string in Python?

4. What will be the output of the following python code?

str1 = "School"

print(str1*3)

5. What is slicing?

Part -III

Answer the following questions (3 Marks)

1. 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

2. Write a short about the followings with suitable example:
    (a) capitalize( ) (b) swapcase( )

3. What will be the output of the given python program?

str1 = "welcome"

str2 = "to school"

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

print(str3)

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

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

Part -IV

Answer the following questions (5 Marks)

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

CHAPTER 9
Part - II

Answer the following questions (2 Marks)

1. What is List in Python?

2. How will you access the list elements in reverse order?

3. What will be the value of x in following python code?

List1=[2,4,6[1,3,5]]

x=len(List1)

4. Differentiate del with remove( ) function of List.

5. Write the syntax of creating a Tuple with n number of elements.

6. What is set in Python?

Part - III

Answer the following questions (3 Marks)

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

2. Write a shot note about sort( ).

3. What will be the output of the following code?

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

print(list)

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

5. List out the set operations supported by python.

6. What are the difference between List and Dictionary?

Part - IV

Answer the following questions (5 Marks)

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

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

3. What is nested tuple? Explain with an example.

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

CHAPTER 10
Part -II

Answer the following questions (2 Marks)

1. What is class?

2. What is instantiation?

3. What is the output of the following program?

class Sample:

__num=10

def disp(self):

print(self.__num)

S=Sample()

S.disp()

print(S.__num)

4. How will you create constructor in Python?

5. What is the purpose of Destructor?

Part -III

Answer the following questions (3 Marks)

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

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

3. Find the error in the following program to get the given output?

```
class Fruits:
def __init__(self, f1, f2):
self.f1=f1
self.f2=f2
def display(self):
print("Fruit 1 = %s, Fruit 2 = %s" %(self.f1, self.f2))
F = Fruits ('Apple', 'Mango')
del F.display
F.display()
```

Output

Fruit 1 = Apple, Fruit 2 = Mango

4. What is the output of the following program?

```
class Greeting:
def __init__(self, name):
self.__name = name
def display(self):
print("Good Morning ", self.__name)
obj=Greeting('Bindu Madhavan')
obj.display()
```

5. How do define constructor and destructor in Python?

Part -IV

Answer the following questions (5 Marks)

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

CHAPTER 11
Part - B

Answer the following questions (2 Marks)

1. Mention few examples of a database.

2. List some examples of RDBMS.

3. What is data consistency?

4. What is the difference between Hierarchical and Network data model?

5. What is normalization?

Part -C

Answer the following questions (3 Marks)

1. What is the difference between Select and Project command?

2. What is the role of DBA?

3. Explain Cartesian Product with a suitable example.

4. Explain Object Model with example.

5. Write a note on different types of DBMS users.

Part -D

Answer the following questions (5 Marks)

1. Explain the different types of data model.

2. Explain the different types of relationship mapping.

3. Differentiate DBMS and RDBMS.

4. Explain the different operators in Relational algebra with suitable examples.

5. Explain the characteristics of DBMS.

CHAPTER 12
Part -II

Answer the following questions (2 Marks)

1. Write a query that selects all students whose age is less than 18 in order wise.

2. Differentiate Unique and Primary Key constraint.

3. Write the difference between table constraint and column constraint?

4. Which component of SQL lets insert values in tables and which lets to create a table?

5. What is the difference between SQL and MySQL?

Part -III

Answer the following questions (3 Marks)

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

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

3. Write any three DDL commands.

4. Write the use of Savepoint command with an example.

5. Write a SQL statement using DISTINCT keyword.

Part -IV

Answer the following questions (5 Marks)

1. Write the different types of constraints and their functions.

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

EMP CODE	NAME	DESIG	PAY	ALLO WANCE
S1001	Hariharan	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.

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

4. Construct the following SQL statements in the student table-

(i) SELECT statement using GROUP BY clause.

(ii) SELECT statement using ORDER BY clause.

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

CHAPTER 13
Part - II

Answer the following questions (2 Marks)

1. What is CSV File?
2. Mention the two ways to read a CSV file using Python.
3. Mention the default modes of the File.
4. What is use of next() function?
5. How will you sort more than one column from a csv file?Give an example statement.

Part - III

Answer the following questions (3 Marks)

1. Write a note on open() function of python. What is the difference between the two methods?
2. Write a Python program to modify an existing file.
3. Write a Python program to read a CSV file with default delimiter comma (,).
4. What is the difference between the write mode and append mode.
5. What is the difference between reader() and DictReader() function?

Part - IV

Answer the following questions (5 Marks)

1. Differentiate Excel file and CSV file.
2. Tabulate the different mode with its meaning.
3. Write the different methods to read a File in Python.
4. Write a Python program to write a CSV File with custom quotes.
5. Write the rules to be followed to format the data in a CSV file.

CHAPTER 14
Part - II

Answer the following questions (2 Marks)

1. What is the theoretical difference between Scripting language and other programming language?

2. Differentiate compiler and interpreter.

3. Write the expansion of (i) SWIG (ii) MinGW

4. What is the use of modules?

5. What is the use of cd command. Give an example.

Part - III

Answer the following questions (3 Marks)

1. Differentiate PYTHON and C++

2. What are the applications of scripting language?

3. What is MinGW? What is its use?

4. Identify the module ,operator, definition name for the following

welcome.display()

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

Part - IV

Answer the following questions (5 Marks)

1 Write any 5 features of Python.

2. Explain each word of the following command.

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

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

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

5. Write a Python program to execute the following c++ coding

#include <iostream>

using namespace std;

int main()

{ cout<<"WELCOME";

return(0);

}

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

CHAPTER 15
Part - II

Answer the following questions (2 Marks)

1. Mention the users who uses the Database.

2. Which method is used to connect a database? Give an example.

3. What is the advantage of declaring a column as "INTEGER PRIMARY KEY"

4. Write the command to populate record in a table. Give an example.

5. Which method is used to fetch all rows from the database table?

Part - III

Answer the following questions (3 Marks)

1. What is SQLite?What is it advantage?

2. Mention the difference between fetchone() and fetchmany()

3. What is the use of Where Clause.Give a python statement Using the where clause.

4. Read the following details.Based on that write a python script to display department wise records

database name :- organization.db

Table name :- Employee

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

5. Read the following details.Based on that write a python script to display records in desending order of

Eno

database name :- organization.db

Table name :- Employee

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

Part - IV

Answer the following questions (5 Marks)

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

2. Write the Python script to display all the records of the following table using fetchmany()

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

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

4. Write a Python script to create a table called ITEM with following specification.
Add one record to the table.

Name of the database :- ABC

Name of the table :- Item

Column name and specification :-

Icode	:-	integer and act as primary key
Item Name	:-	Character with length 25
Rate	:-	Integer
Record to be added	:-	1008, Monitor,15000

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

SUPPLIER				
Suppno	Name	City	Icode	SuppQty
S001	Prasad	Delhi	1008	100
S002	Anu	Bangalore	1010	200
S003	Shahid	Bangalore	1008	175
S004	Akila	Hydrabad	1005	195
S005	Girish	Hydrabad	1003	25
S006	Shylaja	Chennai	1008	180
S007	Lavanya	Mumbai	1005	325

i) Display Name, City and Itemname of suppliers who do not reside in Delhi.

ii) Increment the SuppQty of Akila by 40

CHAPTER 16
Part - II

Answer the following questions (2 Marks)

1. Define: Data Visualization.

2. List the general types of data visualization.

3. List the types of Visualizations in Matplotlib.

4. How will you install Matplotlib?

5. Write the difference between the following functions: plt.plot([1,2,3,4]), plt. plot([1,2,3,4], [1,4,9,16]).

Part - III

Answer the following questions (3 Marks)

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

import matplotlib.pyplot as plt

plt.bar([1,3,5,7,9],[5,2,7,8,2], label="Example one")

plt.bar([2,4,6,8,10],[8,6,2,5,6], label="Example two", color='g')

plt.legend()

plt.xlabel('bar number')

plt.ylabel('bar height')

plt.title('Epic Graph\nAnother Line! Whoa')

plt.show()

2. Write any three uses of data visualization.

3. Write the coding for the following:

a. To check if PIP is Installed in your PC.

b. To Check the version of PIP installed in your PC.

c. To list the packages in matplotlib.

4. Write the plot for the following pie chart output.
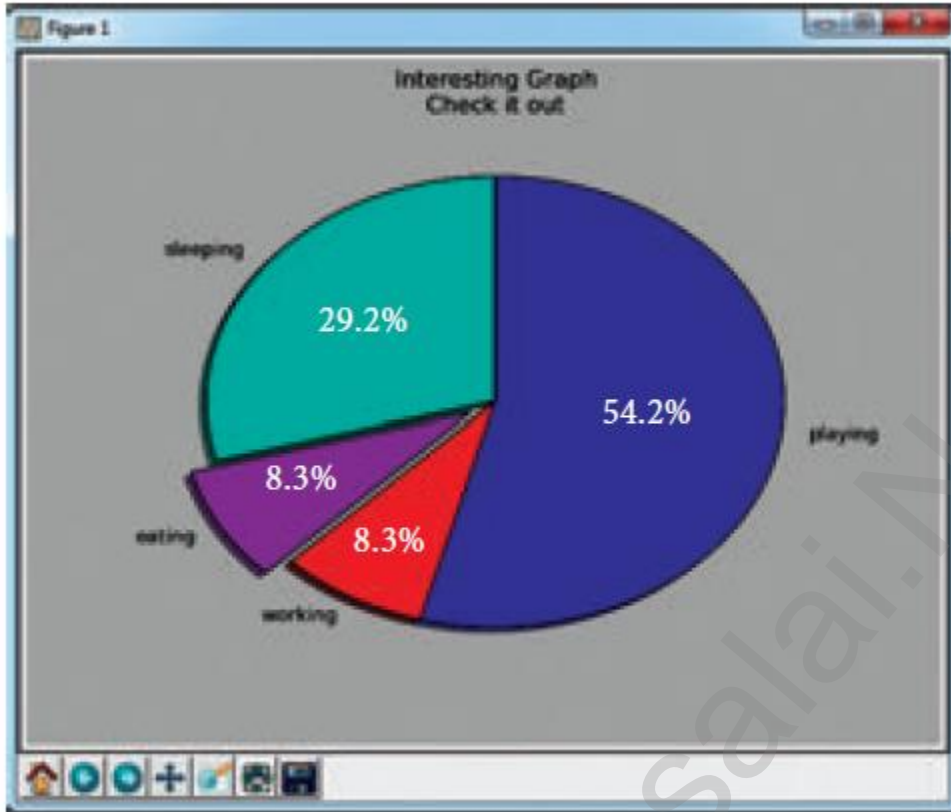
Part - IV

Answer the following questions (5 Marks)

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

2. Explain the various buttons in a matplotlib window.

3. Explain the purpose of the following functions:

a. plt.xlabel

b. plt.ylabel

c. plt.title

d. plt.legend()

e. plt.show()

Hard work beats talent,

When talent doesn't work hard.

All The Best