Roll No. : _____ Sub. Code : 083

*Please Check that this question paper contains **35** questions and **8** pages.*

D.A.V. INSTITUTIONS, CHHATTISGARH

Practice Paper - 7 : 2023-24

Class : XII

Time : 3 Hrs. **Subject : Computer Science-Python (083)** **Max. Marks : 70**

General Instructions :

- *Question paper is containing 35 questions.*
- *The paper is divided into 5 Sections- A, B, C, D and E.*
- *Section A, consists of 18 questions (1 to 18). Each question carries 1 Mark.*
- *Section B, consists of 7 questions (19 to 25). Each question carries 2 Marks.*
- *Section C, consists of 5 questions (26 to 30). Each question carries 3 Marks.*
- *Section D, consists of 2 questions (31 to 32). Each question carries 4 Marks.*
- *Section E, consists of 3 questions (33 to 35). Each question carries 5 Marks.*
- *In some questions of Section B,C& E there will be internal choice.*
- *All programming questions are to be answered using Python Language only.*

Section : A (1 Mark each)

Select the most appropriate option out of the options given or write answer in one word/line.

Attempt all the questions from question No. 1 to 18.

1 Find the invalid identifier from the following 1

a) MyName b) True c) 2ndName d) My_Name

2 Which of the following function is not an aggregate function? 1

a) Round() b) Sum() c) Count () d) Avg ()

3 What is the output of the function shown below? 1

```
import math
abs(math.sqrt(25))
```

a) -5 b) 5 c) 5.0 d) Error

4 Which of the following statements are correct: 1

i. Lists can be used as keys in a dictionary
ii. A tuple cannot store list as an element
iii. We can use extend() function with tuple.
iv. We cannot delete a dictionary once created

a) i, ii, iii b) ii, iii, iv c) i, ii, iv d) None of these

5 State True/False: 1

The keyword LIKE can be used in a WHERE clause to refer to a range of values.

6 The length of an IP address is: 1

a) 8 bits b)16 bits c)32 bits d)48 bits

7 What is the output when following statement is executed ? 1

```
>>>"abcd"[2:]
```

a) a b) ab c) cd d) dc

8 Suppose list1 is [1, 3, 2], What is list1 * 2 ? 1

a) [2, 6, 4] b) [1, 3, 2, 1, 3] c) [1, 3, 2, 1, 3, 2] d) [1, 3, 2, 3, 2, 1]

9 To insert 5 to the third position in list1, we use which command ? 1

a) list1.insert(3, 5)
b) list1.insert(2, 5)
c) list1.add(3, 5)
d) list1.append(3, 5)

10 Which of the following will delete key-value pair for key='red' form a dictionary D1 1

a) Delete D1("red") b) del. D1("red") c) del D1["red"] d) del D1

11 Bluetooth is an example of 1

a) Wide area network
b) Virtual private network
c) Local area network
d) Personal area network

12 What is the output of Statement 7 in the program given below? 1

```
x = 50                                  #Statement 1
deffunc(x):                             #Statement 2
    print('x is', x)                    #Statement 3
    x = 2                               #Statement 4
    print('Changed local x to', x)      #Statement 5
func(x)                                 #Statement 6
print('x is now', x)                    #Statement 7
```

a) x is now 50 b) x is now 2 c) x is now 100 d) None of the mentioned

13 To read the entire remaining contents of the file as a string from a file object **infile**, we use 1

a) infile.read(2) b) infile.read() c) infile.readline() d) infile.readlines()

14 State True or False: 1

DISTINCT option causes a group function to consider only the unique values of the argument expression.

15 Which of the following layer of OSI model also called end-to-end layer? 1

a) Presentation layer b) Network layer c) Session layer d) Transport layer

16 The file pointer, used to go to particular position 1

a) seek b) tell c) read d) write

Q17 and 18 are ASSERTION AND REASONING based questions. Mark the correct choice as
(a) Both A and R are true and R is the correct explanation for A
(b) Both A and R are true and R is not the correct explanation for A
(c) A is True but R is False
(d) A is false but R is True

17 Assertion (A):- If the arguments in function call statement match the number and order of arguments as defined in the function definition, such arguments are called positional arguments. 1
Reasoning (R):- During a function call, the argument list first contains default argument(s) followed by positional argument(s).

18 Assertion (A) : Keys in a Python dictionary should be unique. 1
Reason (R) : Only immutable data types can be used as keys.

Section B

Attempt all the questions from Q.No. 19 to 25 . Each question carries 2 mark

19 a) Give one example of each – Guided media and unguided media. 2
b) Name the protocol that is used to receive emails (1+1)

OR

a) Expand the following terms:
VoIP, OFC
b) Give one difference between HTTP and HTTPs.

20 **Rewrite the following code in Python after removing all syntax error(s). Underline each correction done in the code.** 2

```
defineHello_World():
input('Enter aword',W)
if W=='Hello'
print('Ok')
  else:
print('Not Ok')
```

21 Write a Python method/function SwapParts(Word) to swap the first part and the second part of 2

the string Word. Assuming there are an even number of letters in the string Word. The function should finally display the changed Word.
For example :
If Word = 'Elephant' then the function should convert Word to 'hantElep' and display the output as:
Changed Word is hantElep

OR

Write the definition of a method/function AddOddEven(VALUES) to display sum of odd and even values separately from the list of VALUES.
For example :
If the VALUES contain [15, 26, 37, 10, 22, 13]
The function should display
Even Sum: 58
Odd Sum: 65

22 Predict the possible outcome(s) of the following python code : 2

```
p = 'MY PROGRAM'
i = 0
while p[i] != 'R':
 l = random.randint(0,3) + 5
 print p[l],'-',
i += 1
```

23 A list named **ProdPrice** stores the price of different types of keyboard. Write the Python command to import the required module and (using built-in function) to display the average value of the keyboards from the given list. 2

OR

Write the Python statement for each of the following tasks using BUILT-IN functions/methods only:

(i) To delete the second element from the list L1.
(ii) To display the frequency of "A" or "a"in a given string.

24 Kunal has just created a table named "**Student**" in the database "**SCHOOL**"containing columns **Sname, Clas** and **Fee**. 2
After creating the table, he realized that he has forgotten to add a primary key column in the table. Help him in writing an SQL command to add a primary key column **RollNo** of integer type to the table **Student**.
Thereafter, write the command to insert the following record in the table:
RollNo- 354
Sname- Shruti
Clas: 12
Fee: 23450

OR

Charlie is working in a database named **SPORT**, in which he has created a table named "**Sports**" containing columns **SportId, SportName, no_of_players**, and **category**.
After creating the table, he realized that the attribute, category has to be deleted from the table and a new attribute **TypeSport** of data type string has to be added. This attribute **TypeSport** cannot be left blank. Help Charlie write the commands to complete both the tasks.

25 Predict the output of the following code: 2

```
defChangeList():
L=[]
L1=[]
 L2=[]
 for i in range(1,10):
L.append(i)
for i in range(10,1,–2):
L1.append(i)
for i in range(len(L1)):
```

```
L2.append(L1[i]+L[i])
 L2.append(len(L)-len(L1))
 print(L2)
ChangeList()
```

Section C

Attempt all the questions from Q.No. 26 to 30 . Each question carries 3 mark

26 Predict the output of the following python code: 3

```
Text1="SSCE 2023"
Text2=" "
I=0
while I<len(Text1):
if Textl[I]>="0" and Textl[I]<="9":
 Val = int(Textl[I])
Val = Val + 1 Text2=Text2 + str(Val)
elifTextl[I]>="A" and Textl[I] <="Z":
 Text2=Text2 + (Text1[I+1])
else :
 Text2=Text2 + "*"
I=I+1
print(Text2)
```

27 Consider the following tables FACULTY and COURSES and give outputs for SQL queries (i) to (iii) 3

FACULTY

F_ID	Fname	Lname	Hire_date	Salary
102	Amit	Mishra	12-10-1998	12000
103	Nitin	Vyas	24-12-1994	8000
104	Rakshit	Soni	18-5-2001	14000
105	Rashmi	Malhotra	11-9-2004	11000
106	Sulekha	Srivastava	5-6-2006	10000

COURSES

C_ID	F_ID	Cname	Fees
C21	102	Grid Computing	40000
C22	106	System Design	16000
C23	104	Computer Security	8000
C24	106	Human Biology	15000
C25	102	Computer Network	20000
C26	105	Visual Basic	6000

i) Select COUNT(DISTINCT F_ID) from COURSES;

ii) Select MIN(Salary) from FACULTY,COURSES where COURSES.F_ID =FACULTY.F_ID;

iii) Select avg(Salary) from FACULTY where Fname like 'R%';

28 Write a function in Python to read a text file, Word.txt and displays those lines which contains the word 'The' or 'the'. 3

OR

Write a function, caseCheck() in Python that checks and displays the number of upper case and lower case characters in the text file named Dairy.txt.

29 Write SQL commands for (a) to (c) on the basis of table GRADUATE. 3

Table: GRADUATE

S.NO.	NAME	STIPEND	SUBJECT	AVERAGE	DIV
1	KARAN	400	PHYSICS	68	1
2	DIVAKAR	450	COMPUTER SC	68	1
3	DIVYA	300	CHEMISTRY	62	2
4	ARUN	350	PHYSICS	63	1
5	SABINA	500	MATHEMATICS	70	1
6	JOHN	400	CHEMISTRY	55	2
7	ROBERT	250	PHYSICS	64	1
8	RUBINA	450	MATHEMATICS	68	1
9	VIKAS	500	COMPUTER SC	62	1
10.	MOHAN	300	MATHEMATICS	57	2

i) List the names of those students who

have obtained DIV 1 sorted by NAME.

ii) To count the number of students who are either PHYSICS or COMPUTER SC graduates.

iii) Display Name of the students whose average is more than 65.

30 A list contains following record of a customer: 3
[Customer_name, Phone_number, City]

Write the following user defined functions to perform given operations on the stack named '***status'***:

(i) Push_element() - To Push an object containing name and Phone number of customers who live in Goa to the stack

(ii) Pop_element() - To Pop the objects from the stack and display them. Also, display "Stack Empty" when there are no elements in the stack.

For example:
If the lists of customer details are:
["Gurdas", "99999999999","Goa"]
["Julee", "8888888888","Mumbai"]
["Murugan","77777777777","Cochin"]
["Ashmit", "1010101010","Goa"]

The stack should contain
["Ashmit","1010101010"]
["Gurdas","9999999999"]

The output should be:
["Ashmit","1010101010"]
["Gurdas","9999999999"]
Stack Empty

OR

Write a function in Python, Push(SItem) where , SItem is a dictionary containing the details of stationary items– {Sname:price}.

The function should push the names of those items in the stack who have price greater than 75. Also display the count of elements pushed into the stack.

For example:

If the dictionary contains the following data:

Ditem={"Pen":106,"Pencil":59,"Notebook":80,"Eraser":25}

The stack should contain
Notebook
Pen

The output should be:
The count of elements in the stack is 2

Section D

Attempt all the questions from Q.No. 31 to 32 . Each question carries 4 mark

31 Write SQL qureries for (i) to (iv) and find outputs for SQL queries (v) to (viii), which are based on the tables TRANSPORT and TRIE 4

TABLE: TRANSPORT

TCODE	TTYPE	PERKM
103	ORDINARY BUS	90
105	SUV	40
104	CAR	20
103	ORDINARY BUS	90
101	VOLVO BUS	160
102	AC DELUXE BUS	140

Note:

- PERKS is Freight Charages per kilometer
- TTYPE is Transport Vehicle Type

TABLE: TRIP

NO	NAME	TDATE	KM	TCODE	NOP
11	Tanish Khan	2015-12-13	200	101	32
13	Danish Sahai	2016-06-21	100	103	45
15	Ram Kumar	2016-02-23	350	102	42
12	Fen Shen	2016-01-13	90	102	40
17	Aan Kumar	2015-02-10	75	104	2
14	Veena	2016-06-28	80	105	4
16	Rajpal Kirti	2016-06-06	200	101	25

Note:

- NO is Driver Number
- KM is Kilometer travelled
- NOP is number of travellers travelled in vehicle
- TDATE is Trip Date

To display NO, NAME, TDATE from the table TRIP in descending order of NO.

i) To display the NAME of the drivers from the table TRIP who are traveling by transport vehicle with code 101 or 103.

ii) To display the NO and NAME of those drivers from the table TRIP who travelled between '2015-02-10' and '2015-04-01'.

iii) To display all the details from table TRIP in which the distance travelled is more than 100 KM in ascending order of NOP.

32 Amritya Seth is a programmer, who has recently been given a task to write a python code to perform the following binary file operations with the help of two user defined functions/modules: 4

a. **AddStudents()** to create a binary file called **STUDENT.DAT** containing student information – roll number, name and marks (out of 100) of each student.

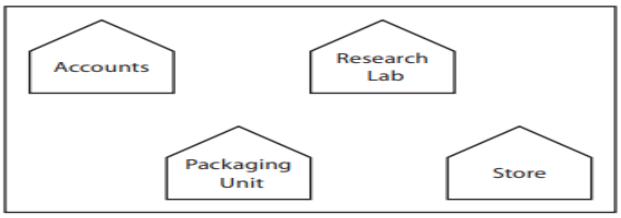
b. **GetStudents()** to display the name and percentage of those students who have a percentage greater than 75. In case there is no student having percentage > 75 the function displays an appropriate message. The function should also display the average percent.

Amritya is unable to do so. You as an expert of python help him to write the code for the same.

Section E

Attempt all the questions from Q.No. 33 to 35 . Each question carries 5 mark

33 Riana Medicos Centre has set up its new centre in Dubai. It has four buildings as shown in the diagram given below: 5



Distances between various buildings are as follows:

Accounts to Research Lab	55 m
Accounts to Store	150 m
Store to Packaging Unit	160 m
Packaging Unit to Research Lab	60 m
Accounts to Packaging Unit	125 m
Store to Research Lab	180 m

Number of computers:

Accounts	25
Research Lab	100
Store	15
Packaging Unit	60

As a network expert, provide the best possible answer for the following queries:

i) Suggest the type of network established between the buildings.

ii) Suggest the most suitable place (i.e., building) to house the server of this organization

iii) Suggest the placement of the following devices with justification: (a) Repeater (b) Hub/Switch

iv) Suggest a system (hardware/software) to prevent unauthorized access to or from the network

34 i) Differentiate between a andw file modes in Python. 5

ii) A binary file "Book.dat" has structure [BookNo, Book_Name, Author, Price]. (2+3)
Write a user defined function CreateFile() to input data for a record and add to Book.dat .

OR

i) Give the difference between text files and binary files.

ii) A binary file "STUDENT.DAT" has structure (admission_number, Name, Percentage).
Write a function countrec() in Python that would read contents of the file "STUDENT.DAT" and display the details of those students whose percentage is above 75.

35 i) Give one difference between primary key and foriegn key. 5

ii) Prachi has created a table named **Employee** in MYSQL database, **MyOrg**:

eno(Employee number)- integer
ename(Employee Name) – string
DOJ (Date of joining) – Date
Salary – float

Note the following to establish connectivity between Python and MySQL:
Username - root
Password - 123
Host – localhost

Prachi, now wants to display the records of employees whose salaryranges between 30000 to 50000. Help Prachi to write the program in Python.

OR

i) Define the term cardinality. Give one example to support your answer.

ii) Neera wants to write a program in Python to insert the following record in the table named **ProductDetails** in MYSQL database, **PRODUCT**:
pid(Product Id)- integer
pname(Product Name) – string
PD (Purchase Date) – Date

Price – float

Note the following to establish connectivity between Python and MySQL:

Username - root
Password - 123
Host - localhost

The values of fields pid, pname, PD and price has to be accepted from the user. Help Neera to write the program in Python.

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