

Please Check that this question paper contains **35** questions and **07** pages.

D.A.V. INSTITUTIONS, CHHATTISGARH
Practice Paper – 1 : 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 | State True or False :
“Variable declaration is implicit in Python. “ | 1 |
| 2 | In a table in MySql database , an attribute A of datatype varchar(20) has the value “Amar”. The attribute B of datatype char(20) has value “Sushil”. How many characters are occupied by attribute A and B ?
(a) 20 , 6 (b) 4,20 (c) 20,20 (d) 4,6 | 1 |
| 3 | What will be the output of the following statement :
print(10 + 2 ** 2 ** 3 + 99 // 11) | 1 |
| 4 | What is the output of the following code ?
S = “hello”
print(S [: 2])
(a) he (b) lo (c) olleh (d) hello | 1 |
| 5 | Which command is used to view the list of databases in mysql ? | 1 |
| 6 | Which of the following is a guided communication medium ?
(a) Infrared (b) Microwave (c) Radio waves (d) Optical Fiber | 1 |
| 7 | Given is a Python list declaration : L = [“Aaa” , “Bbb” , “Ccc” , “Ddd”]
What will be the output of : print(L[-1 : -4 : -1])
(a) [“Bbb” , “Ccc” , “Ddd”] (b) [“Ddd” , “Ccc” , “Bbb”]
(c) [“Aaa” , “Bbb” , “Ccc”] (d) none | 1 |
| 8 | The partition() returns always a 3-elmnt list in string datatype (True/ Flase) | 1 |
| 9 | What will be the output of the following Python code ?
T1 = (5 ,)
T2 = T1 * 2
print (len(T2))
(a) 0 (b) 1 (c) 2 (d) Error | 1 |
| 10 | Write the missing statement :
import math | 1 |

N = _____ (100) #statement to calculate the square root of 100
print(N)

- 11 _____ is a communication methodology designed to deliver both voice and multimedia communications over Internet protocol. 1
(a) VoIP (b) SMTP (c) PPP (d) HTTP
- 12 What is a variable defined outside all the functions referred to as ? 1
(a) Static variable (b) Global variable (c) Local variable (d) Automatic variable
- 13 State whether the following statement is True or False : 1
An exception may be raised even if the program is syntactically correct.
- 14 Which of the following is not a DDL command ? 1
(a) Alter (b) Update (c) Create (d) none of the above
- 15 Which of the following can be a software ? 1
(a) router (b) firewall (c) gateway (d) modem
- 16 Which of the following functions changes the position of file pointer and returns its new position ? 1
(a) flush() (b) tell() (c) seek() (d) offset()
- Q 17 & 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) : List is an immutable data type 1
Reasoning (R) : When an attempt is made to update the value of an immutable variable, the old variable is destroyed and a new variable is created by the same name in memory.
- 18 Assertion (A) : Python Standard Library consists of various modules. 1
Reasoning(R) : A function in a module is used to simplify the code and avoids repetition.

Section B

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

- 19 (i) Expand the following terms : WAN , SMTP 2
(ii) Give one difference between circuit switching and packet switching.
- OR
- (i) What is Web Hosting ?
(ii) Write any two examples of Server side Scripts.
- 20 Rewrite the following code in Python after removing all syntax error(s). Underline each correction done in the code. 2
- ```
50 = To
for K in range (0 , To)
 if K % 4 = 0 :
 print (K * 4)
 Else:
 print (K + 3)
```
- 21 Write a function countNow(PLACES) in Python, that takes the dictionary, PLACES as an argument and displays the names (in uppercase)of the places whose names are longer than 5 characters. 2  
For example, Consider the following dictionary  
PLACES={1:"Delhi",2:"London",3:"Paris",4:"New York",5:"Doha"}  
The output should be:  
LONDON  
NEW YORK
- OR
- Write a function, lenWords(STRING), that takes a string as an argument and returns a tuple

containing length of each word of a string.

For example, if the string is "Come let us have some fun", the tuple will have (4, 3, 2, 4, 4, 3)

22 What will be the output of the following code snippet ? 2

```
L = [11,22, 33,44,55,66,10]
NL = []
for c in L:
 if c % 2 == 0:
 NL.append(c)
print(NL)
```

23 Name the function / method required to : 2

- (i) Check if a string contains only uppercase letters.
- (ii) Gives the length of the list.
- (iii) Returns the element from the tuple having maximum value.
- (iv) Gives all the keys in the dictionary.

24 Ms. Anjali has just created a table named "Emp" containing columns ENm, Dept & Salary. 2  
After creating the table , she realized that she has forgotten to add a primary key column in the table. Help her in writing an MySql command to add a primary key column EmpId of integer type to the table "Emp". Thereafter, write the command to insert a record as per your choice.

25 Predict the output of the following code : 2

```
def changer(P,Q=10):
 P /= Q
 Q = P % Q
 return P
A=200
B=20
A=changer(A,B)
print(A,B,sep="@")
B=changer(B)
print(A,B,sep="@,end="#")
```

### Section C

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

26 Find and write the output of the following Python code : 3

```
def Display(S1):
 S2 = "" #no blank space
 for i in range(len(S1)):
 if S1[i].isupper() :
 S2 = S2 + S1[i].lower()
 elif S1[i].islower():
 S2 = S2 +S1[i].upper()
 else:
 if i%2 ==0:
 S2 = S2 + S1[i-1]
 else:
 S2 = S2 +"#"
```

```
print(S2)
#MAIN PROGRAM
Display("Fun@Python3")
```

27 

|                             |
|-----------------------------|
| <b>Table : Bank_Account</b> |
|-----------------------------|

|                       |
|-----------------------|
| <b>Table : Branch</b> |
|-----------------------|

 3

| ACode | Name   | Type    | ACode | City   |
|-------|--------|---------|-------|--------|
| A01   | Amrita | Savings | A01   | Delhi  |
| A02   | Amit   | Current | A02   | Mumbai |
| A03   | Ravi   | Current | A01   | Pune   |

Answer the following questions on the bases of above Tables :

- Which attribute is considered to be the Foreign Key and from which table.
- What is the Degree and Cardinality of Branch Table.
- Write the command for Cartesian Product of above relations.

28 Write a method CountLines() in Python to read lines from text file "Poem.txt" and display the lines which are not starting with any vowel. 3

Example: If the file content is as follows :

An apple a day keeps the doctor away.

We all Pray for everyone's safety.

A marked difference will come in our country.

The CountLines() function should display the output as :

The number of lines not starting with any vowel : 1

**OR**

Write a function ETCount() in Python, which should read each character of a text file "TESTFILE.TXT" and then count and display the count of occurrence of alphabets E and T individually (including small cases e and t too).

Example: If the file content is as follows:

Today is a pleasant day.

It might rain today.

It is mentioned on weather sites

The ETCount() function should display the output as:

E or e: 6

T or t : 9

29 Write a function NORreplace() in Python, which accepts a list L of numbers. Thereafter, it increments all positive numbers by 2 and decrements all negative numbers by 3. 3

30 A list contains following record of customer : 3  
[Customer\_name, Phone\_number, City]

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

Push\_element() : To Push an object containing name and Phone number of customers who live in 'Kolkata' to the stack.

Pop\_element() : To Pop the objects from the stack and display them. Also, display ' Stack Empty' when there are no elements in the stack.

### Section D

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

31 Write queries (a) to (d) based on the tables EMPLOYEE and DEPARTMENT given below: 4  
Table: EMPLOYEE

| EMPID | NAME   | DOB         | DEPTID | DESIG      | SALARY |
|-------|--------|-------------|--------|------------|--------|
| 120   | Alisha | 23-Jan-1978 | D001   | Manager    | 75000  |
| 123   | Nitin  | 10-Oct-1977 | D002   | AO         | 59000  |
| 129   | Navjot | 12-Jul-1971 | D003   | Supervisor | 40000  |

|     |       |             |      |             |       |
|-----|-------|-------------|------|-------------|-------|
| 130 | Jimmy | 30-Dec-1980 | D004 | Sales Rep   |       |
| 131 | Faiz  | 06-Apr-1984 | D001 | Dep Manager | 65000 |

Table: DEPARTMENT

| DEPTID | DEPTNAME   | FLOORNO |
|--------|------------|---------|
| D001   | Personal   | 4       |
| D002   | Admin      | 10      |
| D003   | Production | 1       |
| D004   | Sales      | 3       |

- To display the average salary of all employees, department wise.
- To display name and respective department name of each employee whose salary is more than 50000.
- To display the names of employees whose salary is not known, in alphabetical order.
- To display DEPTID from the table EMPLOYEE without repetition.

32 Vedansh is a Python programmer working in a school. For the Annual Sports Event, he has created a csv file named Result.csv, to store the results of students in different sports events. The structure of Result.csv is :

[St\_Id, St\_Name, Game\_Name, Result]

Where

St\_Id is Student ID (integer)

ST\_name is Student Name (string)

Game\_Name is name of game in which student is participating(string)

Result is result of the game whose value can be either 'Won', 'Lost' or 'Tie'

For efficiently maintaining data of the event, Vedansh wants to write the following user defined functions:

Accept() – to accept a record from the user and add it to the file Result.csv. The column headings should also be added on top of the csv file.

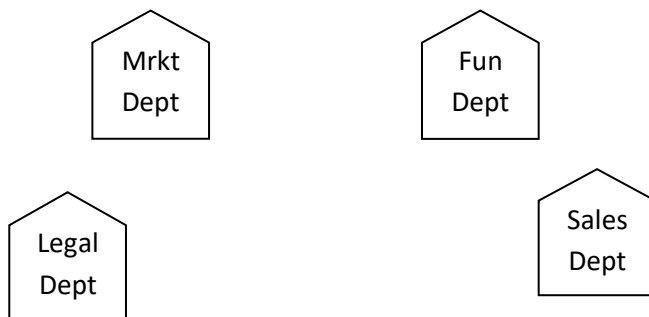
wonCount() – to count the number of students who have won any event.

As a Python expert, help him complete the task.

### Section E

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

33 SunRise Pvt. Ltd. is setting up the network in Ahmedabad. There are four departments— MrktDept, FunDept, LegalDept, SalesDept. 5



Distance between various buildings is as under:

|                        |       |
|------------------------|-------|
| MrktDept to FunDept    | 80 m  |
| MrktDept to LegalDept  | 180 m |
| MrktDept to SalesDept  | 100 m |
| LegalDept to SalesDept | 150 m |
| LegalDept to FunDept   | 100 m |
| FunDept to SalesDept   | 50 m  |

Number of computers in the buildings:

|           |    |
|-----------|----|
| MrktDept  | 20 |
| LegalDept | 10 |
| FunDept   | 08 |
| SalesDept | 42 |

- (i) Suggest the network type between the Departments and specify topology.
- (ii) Suggest the most suitable building to place the server with a suitable reason.
- (iii) Suggest the placement of i) modem, ii) Hub/Switch in the network.
- (iv) The organization is planning to link its sale counters situated in various parts of the same city. Which type of network out of LAN, WAN, MAN will be formed? Justify.
- (v) Is there a requirement of a repeater in the given cable layout? Why/ Why not?

34

(i) Differentiate between r+ and w+ file modes in Python.

2+3

(ii) Consider a file, SPORT.DAT, containing records of the following structure:

=5

[SportName, TeamName, No\_Players]

Write a function, copyData(), that reads contents from the file SPORT.DAT and copies the records with Sport name as “**Basket Ball**” to the file named BASKET.DAT. The function should return the total number of records copied to the file BASKET.DAT.

**OR**

(i) How are text files different from binary files?

(ii) A Binary file, CINEMA.DAT has the following structure:

{MNO:[MNAME, MTYPE]}

Where

MNO – Movie Number

MNAME – Movie Name

MTYPE is Movie Type

Write a user defined function, findType(mtype), that accepts mtype as parameter and displays all the records from the binary file CINEMA.DAT, that have the value of Movie Type as mtype.

35

(i) Define the term Domain with respect to RDBMS. Give one example to support your answer.

1+4

=5

(ii) Kabir wants to write a program in Python to insert the following record in the table named Student in MYSQL database, SCHOOL:

- rno(Roll number )- integer
- name(Name) - string
- DOB (Date of birth) – Date
- Fee – float

Note the following to establish connectivity between Python and MySQL:

- Username - root
- Password - tiger
- Host - localhost

The values of fields rno, name, DOB and fee has to be accepted from the user. Help Kabir to write the program in Python.

OR

(i) Give one difference between alternate key and candidate key.

(ii) Sartaj has created a table named Student in MYSQL database, SCHOOL:

- rno(Roll number )- integer
- name(Name) - string
- DOB (Date of birth) – Date
- Fee – float

Note the following to establish connectivity between Python and MySQL:

Sartaj, now wants to display the records of students whose fee is more than 5000. Help Sartaj to write the program in Python.

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