

## **SAMPLE PAPER**

### **General Instruction:**

1. Please check this question paper contains 35 questions
2. This question paper contains five sections, Section A to E.
3. Section A, consists of 18 questions (Q1 to Q18) carrying 01 mark each.
4. Section B, consists of 07 questions (Q19 TO Q25) carrying 02 marks each
5. Section C, consists of 05 questions (Q26 TO Q30) carrying 03 marks each.
6. Section D, consists of 03 questions (Q31 TO Q33) carrying 05 marks each.
7. Section E, consists of 02 questions (Q34 TO Q35) carrying 04 marks each

All programming questions are to be answered using Python Language only

### **SECTION A – 18 MARKS**

- Q1. State True or False: 1
- “In a Python program, if a break statement is given in a nested loop, it terminates the execution of all loops in one go.”
- Q2. In a table in MYSQL database, an attribute A of datatype varchar(20) has the value “Keshav”. The attribute B of datatype char(20) has value “Meenakshi”. How many characters are occupied by attribute A and attribute B? 1
- 20,6      b) 6,20      c) 9,6      d) 6,9
- Q3. An unexpected event that occurs during runtime and causes program disruption, is called \_\_\_\_\_. 1
- a) Compile time error                      b) Runtime error
- c) Logical error                              d) Exception
- Q4. In MYSQL database, if a table, Alpha has degree 5 and cardinality 3, and another table, Beta has degree 3 and cardinality 5, what will be the degree and cardinality of the Cartesian product of Alpha and Beta? 1
- a. 5,3    b. 8,15    c. 3,5    d. 15,8
- Q5. Which of the following will delete key-value pair for key = “Red” from a dictionary D1? 1
- a. delete D1("Red")    b. del D1["Red"]    c. del.D1["Red"]    d. D1.del["Red"]



```
for i in range(len(L)-1,0,-1):
```

```
    print(L[i])
```

```
fobj.close()
```

a) Red	b) Brown	c) Yellow	d) Brown
Green	Yellow	Orange	Yellow
Orange	Orange	Green	Orange
Yellow	Green	Red	Green
Brown			Red

Q10. Consider the following code:

1

```
b=100
```

```
def test(a):
```

```
    ----- #missing statement
```

```
    b=b+a
```

```
    print(a+b)
```

```
test(10)
```

```
print(b)
```

Which of the following statements should be given in the blank for #Missing Statement , If the output produced is 110

- a. global a      b. global b=100      c. global b      d. global a=100

Q11. The correct syntax of seek() is:

1

a) file\_object.seek(offset[,reference\_point])

b) seek(offset[,reference\_point])

c) seek(offset,file\_object)

d) seek.file\_object(offset)

Q12. Which of the following statements is FALSE about keys in a relational database? 1

- a. Any candidate key is eligible to become a primary key.
- b. A primary key uniquely identifies the tuples in a relation.
- c. A candidate key that is not a primary key is a foreign key.
- d. A foreign key is an attribute whose value is derived from the primary key of another relation.

Q13. Which of the following sublanguages of SQL is used to query information from the database and to insert tuples into, delete tuples from , and modify tuples in the database? 1

- a) DML(Data Manipulation Language)
- b) DDL(Data Definition Language)
- c) Query
- d) Relational Schema

Q14. Consider the file 'myrhymes.txt' 1

If you're happy and you know it, clap your hands (clap clap)  
If you're happy and you know it, clap your hands (clap clap)  
If you're happy and you know it, and you really want to show it.  
If you're happy and you know it. Clap your hands (clap clap)

What will be the output of the following code?

**fileobj=open('myrhymes.txt','r')**

**count=0**

**lines=fileobj.read()**

**word=lines.split()**

```

for i in word:
    if(i=='clap'):
        count=count+1

print(count)

fileobj.close()

```

- a) 9                      b) 6                      c) 3                      d) 4

Q15. Identify the output of the following Python statements.

1

```

x=200

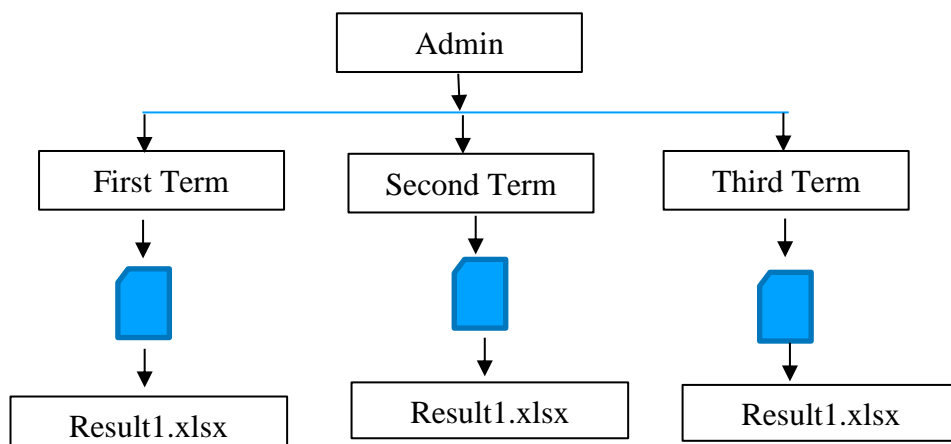
while x>10:
    if x%2==0:
        z=x//2
    else:
        z=x**2
    print(z)
    x=x-50

```

- |        |        |        |        |
|--------|--------|--------|--------|
| a) 100 | b) 100 | c) 400 | d) 100 |
| 75     | 50     | 200    | 22500  |
| 50     | 25     | 100    | 2500   |
| 25     | 10     | 50     | 625    |

Q16. Consider the following directory structure:

1



There are three directories under root directory 'Admin' . Identify the relative path name for the 'Result1.xlsx'

- a) ... \Result1.xlsx                      b) Admin \Final \First Term \Result1.xlsx
- c) .. \First Term \Result1.xlsx      d) First Term \Result1.xlsx

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**

Q17. **Assertion.** Exception handling code is separate from normal code. 1

**Reasoning.** Program logic is different while exception handling code uses specific keywords to handle exceptions.

Q18. **Assertion:** One by One the records can be fetched from the database through the database connection 1

**Reasoning:** The database query results into a set of records known as the resultset.

### **SECTION B – 14 MARKS**

Q19. When do you need multiple except handlers – exception catching blocks ? 2

Q20. Predict the output of the Python code given below: 2

```
import pickle

list1, list2=[2,3,4,5,6,7,8,9,10],[ ]

for i in list1:

    if ( i%2==0 and i%4==0 ):

        list2.append(i)
```

```

f=open("bin.dat","wb")

pickle.dump(list2,f)

f.close()

f=open("bin.dat","rb")

data=pickle.load(f)

f.close()

for i in data:

    print(i)

```

Q21. What is a relation? What is the difference between tuple and attribute? 2

**OR**

Differentiate between Candidate key and Alternate Key in context of RDBMS

Q22. Predict an output of the following: 2

```

def makenew(mystr):

    newstr = " "

    count = 0

    for x in mystr:

        if count%2 != 0:

            newstr = newstr + str(count)

        else:

            if x.islower():

                newstr = newstr + x.upper()

            else:

                newstr = newstr + x

            count += 1

```

```

newstr = newstr + mystr[:1]

print("The new string is:", newstr)

makenew("sTUDeNT")

```

Q23. Predict an output of the following code:

2

```

T= "Mind@work!"

R=" "

l=len(T)

print("Original : ",T)

for i in range(l):

    if T[i].isalpha()==False:

        R+='*'

    elif T[i].isupper()==True:

        R+=chr(ord(T[i])+1)

    else:

        R+= T[i+1]

print("Final : ",R)

```

Q24. Rewrite the following code in python after removing all syntax error(s).

2

Underline each correction done in the code.

```

Num = input("Number:")

Sum = 0

for i in range(10,Num,3)

    Sum+=i

    if i%2=0:

        print ( i*2)

```



**else:**

**print ( i\*3 print Sum)**

- Q25. Are Count(\*) and Count(<Column Name>) the same functions ? 2  
Why/Why not?

**OR**

What is the difference between UNIQUE and PRIMARY KEY constraints

**SECTION C – 15 MARKS**

- Q26. What is the use of a raise statement? Write a code to accept two numbers and display the quotient. Appropriate exception should be raised if the user enters the second number (denominator) as zero (0). 3
- Q27. Write a program to read details of student for result preparation. Incorporate all possible exception-handling codes such as ValueError, IndexError, ZeroDivisionError, user-defined exceptions etc. 3
- Q28. 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). 3

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

**OR**

Write a function AMCount() in Python, which should read each character of a text file ‘STORY.TXT’ should count and display the occurrence of alphabets A and M (including small cases a and m too)

Q29. Consider the table Personal given below:

3

Table : Personal

P_ID	Name	Desig	Salary	Allowance
P01	Rohit	Manager	89000	4800
P02	Kashish	Clerk	NULL	1600
P03	Mahesh	Supervisor	48000	NULL
P04	Salil	Clerk	31000	1900
P05	Ravina	Supervisor	NULL	2100

Based on the given table, write SQL queries for the following:

- Increase the salary by 5% of personals whose allowance is known
- Display name and Total Salary (sum of Salary) and allowance ) of all personals . The column heading 'Total Salary ' should also be displayed.
- Delete the record of Supervisors who have salary greater than 35000

Q30. A list, NList contains following record as list elements:

3

[City, Country, Distance from Delhi]

Each of these records are nested together to form a nested list . Write the following user defined functions in Python to perform the specified operations on the stack named **travel**

- Push\_element(NList):**It takes the nested list as an argument and pushes a list object containing name of the city and country. Which are not in India and distance is less than 3500 km from Delhi
- Pop element() :** It pops the objects from the stack and displays them, also the function should display "Stack Empty" when there are no elements in the stack

For Example, If the nested list contains the following:

Nlist=[['New York','USA',11374],[ "Naypyidaw", "Myanmar",3219],[  
"Dubai", "UAE", 2194],[ "London", "England", 6693],[ "Gangtok", "India",  
1580],[ "Columbo", "Sri Lanka", 3405]]

The stack should contain:

['Naypyidaw', 'Myanmar'],['Dubai', 'UAE'],['Columbo', 'Sri Lanka']

The output should be:

['Columbo', 'Sri Lanka']['Dubai', 'UAE']['Naypyidaw', 'Myanmar']

Stack Empty

### **SECTION D – 15 MARKS**

Q31.

Write SQL commands for the following queries (i) to (v) based on the relations Applicants and Courses given below:

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Table: Applicants

ID	Name	Phone
1	Ravi	4210716
2	Rita	215611
3	Sunil	321157
4	Kumar	512771

Table: Courses

ID	CName	Duration	Fee
2	MBA	2 years	40000
1	MCA	3 years	70000
3	BCA	3 years	20000
4	MCA	3 years	45000

- To display name and fee of the applicants.
- To display name of all applicants in ascending order with their course.
- To display the applicant's name who are enrolled for either BCA or MCA.
- To display average fee.
- To display the phone number of the applicant, who is enrolled in MBA.

Q32. (i) Differentiate between r+ and w+ file modes in Python.

5

- Consider a file SPORT.DAT containing records of the following structure:

[2+3]

[SportsName, 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 no of records copied to the file BASKET.DAT

**OR**

**(Option for part (ii) only)**

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

{MNo:[MNAME, MTYPE]}

Where

MNO: Movie Number

MNAME: Movie Name

MTYPE: MovieType

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

- Q33. i) Define the term Domain with respect to RDBMS. Give one example to support your answer. 5
- ii) Kabir wants to write a program in Python to insert the following record in the table named Student in MYSQL database SCHOOL: [1+4]
- 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 – root
- 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.

### **SECTION E – 8 MARKS**

Q34. Consider the tables PRODUCT and BRAND given below:

4

Table: PRODUCT

PCode	PName	UPrice	Rating	BID
P01	Shampoo	120	6	M03
P02	Toothpaste	54	8	M02
P03	Soap	25	7	M03
P04	Toothpaste	65	4	M04
P05	Soap	38	5	M05
P06	Shampoo	245	6	M05

Table: BRAND

BID	BName
M02	Dant Kanti
M03	Medimix
M04	Pepsodent
M05	Dove

Write SQL queries for the following:

- a. Display product name and brand name from the tables PRODUCT and BRAND.
- b. Display the structure of the table PRODUCT.
- c. Display the average rating of Medimix and Dove brands
- d. Display the name, price, and rating of products in descending order of rating

Q35. 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

4

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