SAMPLE QUESTION PAPER - 2

Computer Science (083)

Class XII (2024-25)

Time Allowed: 3 hours **Maximum Marks: 70**

General Instructions:

- This question paper contains 37 questions.
- All questions are compulsory. However, internal choices have been provided in some questions. Attempt only one of the choices in such questions.
- The paper is divided into 5 Sections- A, B, C, D and E.
- Section A consists of 21 questions (1 to 21). Each question carries 1 Mark.
- Section B consists of 7 questions (22 to 28). Each question carries 2 Marks.
- Section C consists of 3 questions (29 to 31). Each question carries 3 Marks.
- Section D consists of 4 questions (32 to 35). Each question carries 4 Marks.
- Section E consists of 2 questions (36 to 37). Each question carries 5 Marks.
- All programming questions are to be answered using Python Language only.
- In case of MCQ, text of the correct answer should also be written.

Section A

1. State true or false: **[1]**

   The max() and min() when used with tuples, can work if elements of the tuple are all of the same types.

2. Which of the following function returns the total number of values? **[1]**

   a) MIN b) MAX

   c) COUNT d) SUM

3. What is the advantage of DBMS over File Processing System? **[1]**

   a) Redundancy is controlled. b) It provides backup and recovery.

   c) It provides multiple user interfaces. d) All of these

4. s = ' ' (single space). Then **s.isalnum( )** will return _____. **[1]**

a) False
b) Error
c) True
d) nothing

5. What will be the output of following code if a = "abcde". **[1]**

```
>>> a[1:1] == a[1:2]
>>> type(a[1:1]) == type(a[1:2])
```

6. Which of the following is not the possible ways of data exchange? **[1]**

a) Multiplex
b) Simplex
c) Half-duplex
d) Full-duplex

7. Which of the following is mode of both writing and reading in binary format in file? **[1]**

a) wb+
b) wb
c) w
d) w+

8. fetchone() method fetches only one row in a ResultSet and returns a _____. **[1]**

a) String
b) Tuple
c) Dictionary
d) List

9. Which operator tests the column for the absence of data (i.e., NULL value)? **[1]**

a) IS NULL operator
b) NOT operator
c) IS EMPTY operator
d) EXISTS operator

10. Write a single loop to display all the contents of a text file poem.txt after removing leading and trailing whitespaces. **[1]**

11. State true or false: **[1]**

State True or False.
Comments are not executed by interpreter.

12. When a stack, implemented as an array/list of fixed size, is full and no new element can be accommodated, it is called an _____. **[1]**

a) OVERFLOW
b) NOFLOW

c) EXTRAFLOW d) UNDERFLOW

13. Name any two DDL commands. **[1]**

14. A _____ is a network spread across states, countries or whole world. **[1]**

a) PAN b) LAN

c) WAN d) MAN

15. Which two operators can be used on numeric values in Python? **[1]**

A. @

B. %

C. +

D. #

a) B, D b) B, C

c) A, C d) A, D

16. Aggregate functions are also known as **[1]**

a) group functions b) Add function

c) group method d) sum function

17. Which of the following is the fastest media of data transfer? **[1]**

a) Fibre Optic b) Telephone Lines

c) Untwisted Wire d) Co-axial Cable

18. Protocol that enables transfer of voice over internet to make phone calls? **[1]**

a) POP3 b) VOIP

c) PPP d) FTP

19. **Assertion (A):** We can declare multiple exceptions in except statement. **[1]**
Reason (R): The try block may contain the statements which throw different type of exceptions.

a) Both A and R are true and R is the correct explanation of A.

b) Both A and R are true but R is not the correct explanation of A.

c) A is true but R is false.

d) A is false but R is true.

20. **Assertion (A):** In the case of rb mode, the file pointer exists at the beginning of the file. **[1]**

Reason (R): In the case of rb+ mode, the file pointer exists at the end of the file.

a) Both A and R are true and R is the correct explanation of A.

b) Both A and R are true but R is not the correct explanation of A.

c) A is true but R is false.

d) A is false but R is true.

21. **Assertion (A):** The python abs() function is used to return the absolute value of a number. **[1]**

Reason (R): The python all() function doesn't accept an iterable object.

a) Both A and R are true and R is the correct explanation of A.

b) Both A and R are true but R is not the correct explanation of A.

c) A is true but R is false.

d) A is false but R is true.

Section B

22. How is Coaxial cable different from Optical Fibre? **[2]**

23. Consider the table Student whose fields are **[2]**

SCODE	Name	Age	strode	Points	Grade
101	Amit	16	1	6	NULL
102	Arjun	13	3	4	NULL
103	Zaheer	14	2	1	NULL
104	Gagan	15	5	2	NULL
105	Kumar	13	6	8	NULL

Write the Python code to update grade to **A** for all these students who are getting more than 8 as points.

24. What are data types? What are Python's built-in core data types? **[2]**

OR

Find the errors in the following code and write the correct code.

```
s = [11, 13, 15]
for n in len(s) :
tot = tot + s[n]
print(tot)
```

i. Underline the corrections.

ii. Write the reason! error next to it in the comment form.

25. Which record will get inserted in the table by the following code? **[2]**

```
import mysql. connector as sqltor
mycon = sqltor .connect(host = "localhost", user = "learner", passwd = "fast",
database="test")
cursor = mycon.cursor()
query = "INSERT INTO books (title, isbn) VALUES(%s, %s)".%
(fUshakaalJ, '12678987036')
cursor.execute(query)
mycon.commitO
```

26. Write a method in python to display the elements of list thrice if it is a number and display the element terminated with if it is not a number. **[2]**

For example, if the content of list is as follows :

List =['41', 'DROND', 'GIRIRAJ', '13', 'ZARA']

The output should be

414141

DROND#

GIRIRAD#

131313

ZARA#

OR

Write a program that reads an integer N from the keyboard computes and displays the sum of the numbers from N to (2 * N) if N is nonnegative. If N is a negative number, then it's the sum of the numbers from (2 * N) to N. The starting and ending points are included in the sum.

27. Write a function in Python to count the number of lowercase and uppercase characters in a text file "Book.txt". **[2]**

OR

Write a function **Revstring ()** to read a textfile "Input.txt" and prints the words starting with 'O' in reverse order. The rest of the content is displayed normally.
Example:
If content in the text file is:
UBUNTU IS AN OPEN SOURCE OPERATING SYSTEM
Output will be:
UBUNTU IS AN NEPO SOURCE GNITAREPO SYSTEM
(words 'OPEN' and 'OPERATING' are displayed in reverse order)

28. What is raw input? **[2]**

Section C

29. Write a function which takes two string arguments and returns the string comparison result of the two passed strings. **[3]**

OR

Write the term suitable for following descriptions:

i. A name inside the parentheses of a function header that can receive value.

ii. An argument passed to a specific parameter using the parameter name.

iii. A value passed to a function parameter.

iv. A value assigned to a parameter name in the function header.

v. A value assigned to a parameter name in the function call.

vi. A name defined outside all function definitions.

vii. A variable created inside a function body.

30. Write separate user defined functions for the following: **[3]**

i. **PUSH(N) -** This function accepts a list of names, **N** as parameter. It then pushes only those names in the stack named OnlyA which contain the letter **'A'**.

ii. **POPA(OnlyA) -** This function pops each name from the stack **OnlyA** and displays it. When the stack is empty, the message **"EMPTY"** is displayed.
For example:
If the names in the list **N** are
['ANKITA', 'NITISH', 'ANWAR', 'DIMPLE', 'HARKIRAT']

Then the stack **OnlyA** should store
['ANKITA', 'ANWAR', 'HARKIRAT']
And the output should be displayed as
HARKIRAT ANWAR ANKITA EMPTY

OR

Write the following user defined functions:

i. **pushEven(N) -** This function accepts a list of integers named **N** as parameter. It then pushes only even numbers into the stack named **EVEN**.

ii. **popEven(EVEN) -** This function pops each integer from the stack **EVEN** and displays the popped value. When the stack is empty, the message **"Stack Empty"** is displayed.
For example:
If the list **N** contains
[10,5,3,8,15,4]
Then the stack, **EVEN** should store
[10,8,4]
And the output should be
4 8 10 Stack Empty

31. What do you understand by the local and global scope of variables? How can you access a global variable inside the function, if the function has a variable with the same name? **[3]**

OR

Write the definition of a function Sum3(L) in Python, which accepts a list L of integers and displays the sum of all such integers from the list L which end with the digit 3.
For example, if the list L is passed
[123, 10, 13, 15, 23]
then the function should display the sum of 123, 13, 23, i.e. 159 as follows:
Sum of integers ending with digit 3 = 159

Section D

32. Write a program to implement a stack for these book details (book no., book name). That is, now each item node of the stack contains two types of information - a book no. and its name. Just implement Push and display operations. **[4]**

OR

Each node of a STACK contains the following information :

i. Pin code of a city,

ii. Name of the city.

Write a program to implement the following operations in the above stack

i. PUSH( ) To push a node into the stack.

ii. POP( ) To remove a node from the stack.

33. Consider the file p2.txt created above. Now predict the output of following code that works with p2.txt. Explain the reason behind this output. **[4]**

```
fp1 = open("p2.txt", "r")
print(fp1.readline(20))
s1 = fp1.readline(30)
print(s1)
print(fpl.readline(25))
```

34. Consider the following tables CABHUB and CUSTOMER and answer the following parts of this question : **[4]**

Table: CABHUB

Vcode	VehicleName	Make	Color	Capacity	Charges
100	Innova	Toyota	WHITE	7	15
102	SX4	Suzuki	BLUE	4	14
104	C Class	Mercedes	RED	4	35
105	A-Star	Suzuki	WHITE	3	14
108	Indigo	Tata	SILVER	3	12

Table: CUSTOMER

CCode	CName	Vcode
1	Hemant Sahu	101
2	Raj Lai	108
3	Feroza Shah	105
4	Ketan Dhal	104

Give the output of the following SQL queries :

i. SELECT COUNT (DISTINCT Make) FROM CABHUB ;

ii. SELECT MAX(Charges), MIN(Charges) FROM CABHUB ;

iii. SELECT COUNT(*), Make FROM CABHUB ;

iv. SELECT VehicleName FROM CABHUB WHERE Capacity = 4;

OR

Consider the following tables PRODUCT and CLIENT. Write SQL commands for the following statements.

Table: **PRODUCT**

P_ID	ProductName	Manufacturer	Price
TP01	Talcum Powder	LAK	40
FW05	Face Wash	ABC	45
BS01	Bath Soap	ABC	55
SH06	Shampoo	XYZ	120
FW12	Face Wash	XYZ	95

Table: **CLIENT**

C_ID	ClientName	City	P_ID
01	Cosmetic Shop	Delhi	FW05
06	Total Health	Mumbai	BS01
12	Live Life	Delhi	SH06
15	Pretty Woman	Delhi	FW12
16	Dreams	Banglore	TP01

i. To display the details of those Clients whose City is Delhi.

ii. To display the details of Products whose Price is in the range of 50 to 100 (Both values included).

iii. To display the ClientName, City from table Client, and ProductName and Price from table Product, with their corresponding matching P_ID.

iv. To increase the Price of all Products by 10.

35. Create following table using Python code. **[4]**

Table Name = Customer

Database - xyzcorp.

Userid - Adminxyz

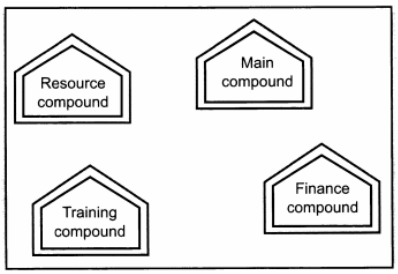
Password - Axydm12

CUSTNUMB	CUSTNAME	ADDRESS	BALANCE	CREDLIM	SLSRNUMB

124	TINA ADAMS	481 Tilak lane, CP, Delhi	41800.75	50,000	3
256	R VENKAT	215 Mylapore, Chennai	100000.75	80,000	6
567	BHUVNA BALAJI	808, Bala Nagar, Hyderabad	57,000.75	50000	6
622	PRATHAM JAIN	149, Plot 182, sec-9 Dwarka, Delhi	57500.75	80,000	12

Section E

36. Learn Together is an educational NGO. It is setting up its new campus at Jabalpur for its web-based activities. The campus has 4 compounds as shown in the diagram below: **[5]**



Center to center distances between various Compounds as per architectural drawings (in Metre) is as follows:

Main Compound to Resource Compound	110 m
Main Compound to Training Compound	115 m
Main Compound to Finance Compound	35 m
Resource Compound to Training Compound	25 m
Resource Compound to Finance Compound	135 m
Training Compound to Finance Compound	100 m

The Expected Number of Computers in each Compound is as follows:

Main Compound	5
Resource Compound	15

Training Compound	150
Accounts Compound	20

i. Suggest the most suitable place (i.e., compound) to house the server for this NGO. Also, provide a suitable reason for your suggestion.

ii. Suggest the placement of the following devices with justification:

a. Repeater

b. Hub/Switch

iii. The NGO is planning to connect its International office situated in Mumbai, which out of the following wired communication link, you will suggest for very high-speed connectivity?

a. Telephone Analog Line

b. Optical Fiber

c. Ethernet Cable

37. Write SQL queries for (i) to (iv) and find outputs for SQL queries (v) to (viii), which are based on the tables. **[5]**

TRAINER

TID	TNAME	CITY	HIREDATE	SALARY
101	SUNAINA	MUMBAI	1998-10-15	90000
102	ANAMIKA	DELHI	1994-12-24	80000
103	DEEPTI	CHANDIGARH	2001-12-21	82000
104	MEENAKSHI	DELHI	2002-12-25	78000
105	RICHA	MUMBAI	1996-01-12	95000
106	MANIPRABHA	CHENNAI	2001-12-12	69000

COURSE

CID	CNAME	FEES	STARTDATE	TID
C201	AGDCA	12000	2018-07-02	101
C202	ADCA	15000	2018-07-15	103
C203	DCA	10000	2018-10-01	102
C204	DDTP	9000	2018-09-15	104
C205	DHN	20000	2018-08-01	101

C206	0 LEVEL	18000	2018-07-25	105

i. Display the Trainer Name, City & Salary in descending order of their Hiredate.

ii. To display the TNAME and CITY of Trainer who joined the Institute in the month of December 2001.

iii. To displayTNAME, HIREDATE, CNAME, STARTDATE from tables TRAINER and COURSE of all those courses whose FEES is less than or equal to 10000. (iv) To display number of Trainers from each Ans. city.

iv. SELECT TID. TNAME, FROM TRAINER WHERE CITY NOT IN ('DELHT', 'MUMBAI');

v. SELECT DISTINCT TID EROM COURSE;

vi. SELECT TID, COUNT(*), MIN (FEES) FROM COURSE. CROUP BY TID HAVING COUNT(*)>1;

vii. SELECT COUNTS), SUM(FEES) FROM COURSE WHERE STARTDATE< '2018-09- 15';

OR

Write SQL queries for (i) to (iv) and find outputs for SQL queries (v) to (viii), Which are based on the table.

Table: CUSTOMER

CNO	**CNAME**	**ADDRESS**
101	Richa Jain	Delhi
102	Surbhi Sinha	Chennai
103	Lisa Thomas	Bangalore
104	Imran Ali	Delhi
105	Roshan Singh	Chennai

Table: TRANSACTION

TRNO	**CNO**	**AMOUNT**	**TYPE**	**DOT**
T001	101	1500	Credit	2017-11-23
T002	103	2000	Debit	2017-05-12
T003	102	3000	Credit	2017-06-10
T004	103	12000	Credit	2017-09-12
T005	101	1000	Debit	2017-09-05

i. To display details of all transactions of TYPE Credit from Table TRANSACTION.

ii. To display the CNO and AMOUNT of all Transactions done in the month of September 2017 from table TRANSACTION.

iii. To display the last dale of transaction (DOT) front the table TRANSACTION for the customer having CNO as 103.

iv. To display all CNO CNAME and DOT (date of transaction) of those CUSTOMERS fron, tables CUSTOMER and TRANSACTION who have done transactions more than or equal to 2000.

v. SELECT COUNT(*), AVG (AMOUNT) FROM TRANSACTION WHERE DOT > = '2017-06-01'

vi. SELECT CNO, COUNT(*), MAX (AMOUNT) FROM TRANSACTION GROUP BY CNO HAVING COUNT (*)> 1

vii. SELECT CNO, CNAME FROM CUSTOMER WHERE ADDRESS NOT IN ('DELHI', BANGALORE)

viii. SELECT DISTINCT CNO FROM TRANSACTION

Solution

SAMPLE QUESTION PAPER - 2

Computer Science (083)

Class XII (2024-25)

Section A

1. **(a)** True

   Explanation:

   True

2. **(c)** COUNT

   Explanation:

   COUNT

3. **(d)** All of these

   Explanation:

   It provides all the mentoined features.

4. **(a)** False

   Explanation:

   False

5. The output produced by given code will be:

   False , a[1:1] , a[1:2] value is different

   True a[1:1] , a[1:2] is same type

6. **(a)** Multiplex

   Explanation:

   Multiplex ,The process of combining the data streams is known as **multiplexing**

7. **(a)** wb+

   Explanation:

   wb+ mode opens a file for both writing and reading in binary format. It overwrites the file if the file exists. If the file does not exist, creates a new file for reading and writing.

8. **(b)** Tuple

   Explanation:

   Tuple

9. **(a)** IS NULL operator

   Explanation:

   The IS NULL operator is used in the database for representing that a particular field is empty.

10. for line in file("poem.txt"):
    print(line.strip())
11. **(a)** True
    Explanation:
    True
12. **(a)** OVERFLOW
    Explanation:
    When a stack, implemented as an array/list of fixed size, is full and no new element can be accommodated, it is called an OVERFLOW.
13. DDL consists of various commands such as:
    i. Create
    ii. Alter
14. **(c)** WAN
    Explanation:
    WAN spans a large geographical area, often a country or a continent and uses various commercial and private communication lines to connect computers.
15. **(b)** B, C
    Explanation:
    B, C
16. **(a)** group functions
    Explanation:
    group functions
17. **(a)** Fibre Optic
    Explanation:
    Fibre Optic
18. **(b)** VOIP
    Explanation:
    VOIP stands for voice over internet protocol. It enables the transfer of voice using packet switched network rather than using public switched telephone network. By using VOIP software, phone calls can be done using standard internet connection.
19. **(a)** Both A and R are true and R is the correct explanation of A.
    Explanation:
    We can declare multiple exceptions in except statement since the try block may contain statements which throw different type of exceptions. We can also specify an else block

along with the try-except statement, which will be executed if no exception is raised in the try block and Finally block, which always gets executed either exception is generated or not.

20.

(c) A is true but R is false.

Explanation:

In the case of rb mode, the file pointer exists at the beginning of the file. In the case of rb+ mode, the file pointer also exists at the beginning of the file.

21.

(c) A is true but R is false.

Explanation:

The abs() function is used to return the absolute value of a number. It takes only one argument.

The all() function accepts an iterable object (such as list, dictionary, etc.). It returns true if all items in iterable are true. Otherwise, it returns False.

Section B

22. Coaxial Cables is the most commonly used transmission media for LANs. It consists of solid wire cores surrounded by one or more foil or wire shields, each separated by some kind of plastic insulator whereas optical fibres consist of thin strands of glass or glass-like materials.

    Coaxial cables transmit electrical signals whereas Optical fibres transmit light signals or laser signals.

23.
```
import mysql.connector as mydb
con = mydb.connect (host = "localhost",user = "Admin",passwd = "Admin@123",database
cursor = con.cursor()
sql = "UPDATE Student SET Grade = 'A' WHERE Points > 8"
try:
   cursor.execute (sql)
   con.commit ()
except:
   con.rollback ()
con.close ()
```

24. A data type, in programming, is a classification that specifies which type of value a variable has and what type of mathematical, relational or logical operations can be applied to it without causing an error.

    Python's built-in core data types are:

i. Numbers (integer, floating-point, complex numbers, Booleans)
ii. String
iii. List
iv. Tuple
v. Dictionary

OR

```
s = [11, 13, 15]
tot = 0 # tot must be defined before being used
for n in range(len(s)) : # len(s) returns integer which is not iterable,
# to make an iterable from integer range() is used
tot = tot + s[n] # incorrect indentation
print(tot)
```

25. fUshakaalJ, 12678987036
26.
```
List =['41', 'DROND', 'GIRIRAJ', '13', 'ZARA']
for w in List:
if w.isdigit(): # for numeric digits
print(w*3)
else:
print (w+"#") #for string
```

OR

```
N = int(input("Enter N: "))
step = N // abs(N)
sum = 0
for i in range(N, 2*N + step, step):
sum += i
print(sum)
```

27.
```
def count_lower_upper():
name = “Book.txt”
lower = upper = 0
with open(name, 'r') as fileObject:
for line in fileObject:
for word in line:
for char in word:
if char.islower():
lower = lower + 1
if char.isupper():
upper = upper + 1
```

```
print("Number of lower case letters in file are ", lower)
print ("Number of upper case letters in file are", upper)
```

OR

```
def RevString():
    fin=open('Input.txt')
    S=fin.read()
    for w in S.split():
        if w[0]=='O':
            print(w[::-1],end=' ')          #ignore end
        else:
            print(w,end=' ')                #ignore end
    fin.close()
```

28. raw_input is a function which takes a string (e.g., a question) as argument, displays the string to the terminal window, halts the program and lets the user write the input in the terminal, and then the input is returned to the calling code as a string object.
e.g : name = raw_input("Enter your name : ") lets the user enter a string and returns the value passed by the user to the variable name.

Section C

29.
```
def stringCompare(str1, str2):
if str1.length() != str2.length() :
return False
else:
for i in range (str1.length()):
if str1[i] != str2[i]:
return False
else:
return True

first_string = raw_input("Enter First string:")
second_string = raw_input("Enter Second string:")
if stringCompare(first_string, second_string):
print ("Given Strings are same.")
else:
print ("Given Strings are different.")
```

OR

i. Parameter

ii. Named argument
iii. Argument
iv. Default value
v. Named/keyword arguments
vi. Global Variable
vii. Local Variable

30. a. def PUSH(N):
```
    OnlyA = Stack()
    for name in N:
        if 'A' in name:
            OnlyA.push(name)
    return OnlyA
```

b. def POPA(OnlyA):
```
    result = []
    while not OnlyA.is_empty():
        result.append(OnlyA.pop())
    return result
```

OR

a. def pushEven(N):
```
    EVEN = Stack()
    for num in N:
        if num % 2 == 0:
            EVEN.push(num)
    return EVEN
```

b. def popEven(EVEN):
```
    result = []
    while not EVEN.is_empty():
        popped_num = EVEN.pop()
        result.append(popped_num)
        print(popped_num, end=" ")
    print("Stack Empty")
```

31. A global variable is a variable that is accessible globally. A local variable is one that is only accessible to the current scope, such as temporary variables used in a single function definition.
A variable declared outside of all the functions or in global scope is known as a global

variable. A global variable can be accessed inside or outside of the function whereas local variables can be used only inside of the function. If a function has a local variable name as a global variable, then in that function scope, the local variable will hide the global variable with the same name. We can access a global variable having the same name as a local variable by declaring its name with the keyword global, e.g., as global A. Global variables are declared outside any function, and they can be accessed (used) on any function in the program. Local variables are declared inside a function and can be used only inside that function. It is possible to have local variables with the same name in different functions.

OR

```
def Sum3(L):
    total_sum = 0
    last3 = []
    for num in L:
        if num % 10 == 3:  # Check if the last digit is 3
            last3.append(num)  # Append qualifying numbers to last3 list
            total_sum += num
    print("Original List", L)  # Display the original list
    print("Numbers ending with digit 3:", last3)  # Print the list
    print(f"Sum of numbers ending with digit 3 = {total_sum}")
# Example usage
L = [123, 10, 13, 15, 23]
Sum3(L)
```

Section D

32.
```
" " "
Stack: implemented as a list
top: integer having a position of a topmost element in Stack
" " "
def cls( ):
print("\n"* 100)
def is Empty(stk) :
if stk== [ ] :
return True
else :
return False
def Push(stk, item) :
stk.append(item)
```

```
top = len(stk) - 1
def Display(stk) :
if isEmpty(stk) :
print ("Stack empty”)
else :
top = len(stk) - 1
print(stk[top], "<-top")
for a in range(top-1, -1, -1 ) :
print(stk[a])
# __main__
Stack = [] # initially stack is empty
top = None
while True :
cls()
print ("STACK OPERATIONS")
print("1. Push operation")
print("2. Display stack")
print("3. Exit")
ch = int(input("Enter your choice (1-5) :"))
if ch == 1 :
bno = int(input("Enter Book no. to be inserted :"))
bname = input ("Enter Book name to be inserted :")
item = [bno, bname] # creating a list from the input items.
PushfStack, item)
input()
elif ch == 2 :
Display(Stack)
input( )
elif ch == 3 :
break
else :
print("Invalid choice!")
input()
```

OR

```
MAX_SIZE = 1000
stack = [0 for i in range(MAX_SIZE)]
top = 0
```

```
def isEmpty():
global top
return top == 0
def push(x):
global stack, top
if top >= MAX_SIZE:
return
stack[top] = x
top += 1
def pop():
global stack, top
if isEmpty():
return
else:
top -= 1
return stack[top]
string = input().split()
for i in string:
push(i)
while not isEmpty():
x = pop()
 print(x+x, end = ' ')
```

33. The output produced by above code will be:

    A poem by Paramhansa
    Yogananda
    Better than Heaven or Arc

    The reason behind this output is that the first file-read line (i.e., fp1.readline(20), read 20 bytes from the file pointer. As just after opening the file, the file pointer is at the beginning of the file, the 20 bytes are read from the beginning of the file which returned string as "A poem by Paramhansa \n" - this is because readlinei) returns the read string by adding an end-line character to it (\n). So the first line of output was printed as:

    A poem by Paramhansa

    After the first readline(), the file pointer was at the space following word 'Paramhansa', so the next readline() started reading from there and read 15 characters or end-of-the-line, whichever is earlier. So the read string was "Yogananda\n" - notice the space before word Yogananda. Hence came the second line of the output.

Now the file-pointer was at the beginning of the third line and the next readline (i.e., fp1.readline(25)) read 25 characters from this line and gave the last line of output.

34. i. 4

ii.

35	12

iii. Invalid query

iv. SX4

C Class

OR

i. SELECT * FROM CLIENT
WHERE City = ' Delhi ' ;

ii. SELECT * FROM PRODUCT
WHERE Price BETWEEN 50 AND 100 ;

iii. SELECT ClientName, City, ProductName, Price
FROM CLIENT, PRODUCT
WHERE CLIENT.P_ID = PRODUCT.P_ID ;

iv. UPDATE PRODUCT
SET Price = Price + 10 ;

35. import MySQLdb
db=MySQLdb.connect("localhost", "Adminxyz", " Axydm12", "xyzcorp")
cursor=db.cursor()
cursor.execute("DROP TABLE IF EXISTS CUSTOMER")
sql="Create Table Customer (CUSTNUMB CHAR(3) NOTNULL, CUSTNAME CHAR(60) NOT NULL, ADDRESS CHAR(100), BALANCE Float, CREDLIM Float, SLSRNUMB CHAR(2) NOT NULL)"
cursor.execute(sql)
cursor.close()
rec_ins=[('124', 'TINA ADAMS', '481 Tilak lane, CP, Delhi', 41800.75,50000, '3') ,('256', 'R VENKAT', '215 Mylapore, Chennai', 10,000.75 , 80000,’6'),('567', 'BHUVNA BALAJI', '808 Bala Nagar, Hydarabad', 57000.75,50000,’6'),('622', 'PRATHAM JAIN', '149 Plot 182, sec-9, Dwerka,Delhi', 57500.75,80000, '12')].
sql_insert= "INSERT INTO Customer (CUSTNUMB, CUSTNAME, ADDRESS, BALANCE, CREDLIM,SLSRNUMB, VALUES ('%s', '%s', '%s', ' % f ' , '% f', %s,)"
cursor= db.cursror (prepared= TRUE)
try:
cursor. executemany (sql_insert, rec_ins)
print(cursor.rowcount, "All Records inserted")
db. commit()

except:
db.rollback()
cursor.close()
db.close()

Section E

36. i. The most suitable place to house the server is Training Compound as it has a maximum number of computers.

ii. a. Repeater: As per one layout, the repeater can be avoided as all distances between the compounds are <= 100 m.

b. Hub/Switch: Training compound as it is hosting the server.

iii. Optical Fibre

37. i. SELECT TNAME, CITY, SALARY FROM TRAINER ORDER BY HIREDATE

ii. SELECT TNAME, CITY FROM TRAINER WHERE HIREDATE BETWEEN '2001-12-01' AND '2001-12-31'

SELECT TNAME, CITY FROM TRAINER WHERE HIREDATE > = '2001-12-01' AND HIREDATE < = '2001-12-31';

iii. SELECT TNAME, HIREDATE, CNAME, STARTDATE FROM TRAINER.COURSE WHERE TRAINER.TID= COURSE.TID AND FEES < = 10000;

iv. SELECT CITY, COUNT(*)) FROM TRAINER GROUP BY CITY;

v.

TIDTNAME	
103	DEEPTI
106	MANIPRABHA

vi. DISTINCT TID

101
103
102
104
105

vii.

TIDCOUNT(*)		MIN(FEES)
101	2	12000

viii.

COUNT(*)	SUM(FEES)
4	65000

OR

i. SELECT * FROM TRANSACTION WHERE TYPE = " Credit";

ii. SELECT CNO, AMOUNT FROM
TRANSACTION WHERE (MONTH (DOT)= "Sept " AND YEAR(DOT)=2017)

iii. SELECT MAX (DOT) FROM
TRANSACTION WHERE CNO="103"

iv. SELECT CNO, NAME, DOT FROM
CUSTOMERS C, TRANSACTION T
WHERE C.CNO=T.CNO AND Sum(AMOUNT)=2000 GROUP BY T.CNO

v.

3	4833.33

vi.

2	12000

vii.

102	Surbhi Singh
105	Roshan Singh

viii. 101
103
102