

- (g) Carefully observe the following Python code and answer the questions that follow: (2)

```
global x
x=5
def fun2():
    x=3
    print(x)
x=x+1
print(x)
```

On execution, the above code produces the following output:

```
6
3
```

Explain the output with respect to the scope of the variables.

2. (a) Write a statement in Python to open a text file RETEST.TXT so that new content can be read or written from it. (1)

- (b) What is the output of the following program: (1)

```
def myfunc(a):
    a = a + 2
    a = a * 2
    return a
print(myfunc(2))
```

- (c) Write the modules that will be required to be imported to execute the following code in Python: (1)

```
def main():
    for i in range(len(string)):
        if string[i] == " ":
            print()
        elif:
            c = string[i].upper()
    print("String is:", c)
    print("String length=", len(string.floor()))
```

- (d) Carefully observe the code and give the output: (1)

```
def example(a):
    a = a + '2'
    a = a*2
    return a
example("hello")
```

- (e) Find the output of the following: (1)

```
str = "Pythonforbeginners is easytolearn"
str2 = "easy"
print("The first occurrence of str2 is at : ", end="")
print(str.find(str2, 4))
```

- (f) Kritika was asked to accept a list of even numbers but she did not put the relevant condition while accepting the list. Write a user-defined function oddtoeven(L) that accepts the List L as an argument and converts all the odd numbers into even by multiplying them by 2. (2)

- (g) Write a Python function, generatefibo(n) where n is the limit, using a generator function, Fibonacci (max) (where max is the limit n), that produces the Fibonacci series. (2)

- (h) Consider the following unsorted list: 95, 79, 19, 43, 52, 3. Write the passes of bubble sort for sorting the list in ascending order till the 4th iteration. (2)
- (i) Write a user-defined function in Python that displays the number of lines starting with 'H' in the file Para.txt. *For example*, if the file contains: (3)
- Whose woods these are I think
I know. His house is in the
village though;
He will not see me stopping here
To watch his woods fill up
with snow. Then the line
count should be 2.

OR

Write a Python program to copy file1.txt into file2.txt.

- (j) Write a program to perform insert and delete operations on a Queue containing Members details as given in the following definition of item node: (4)

Member No	integer
Member Name	String
Age	integer

```
def isEmpty(Qu):
    if Qu == []:
        return True
    else:
        return False
def Enqueue(Qu, item):
    # Write the code to insert member details using Queue.
def Dequeue(Qu):
    # Write the code to delete a member using Queue.
```

SECTION-B

3. Answer the following questions:

- (a) The full form of HTTP is _____ . (1)
- (b) _____ is a device that connects two dissimilar networks. (1)
- (c) A _____ is the result of two devices on the same Ethernet network attempting to transmit data at exactly the same time. (1)
- (d) translates domain names to IP addresses so browsers can load Internet resources. (1)
- (e) The following is a 32-bit binary number, usually represented as 4 decimal values, each representing 8 bits, in the range 0 to 255 (known as octets) separated by decimal points. (2)

140.179.220.200

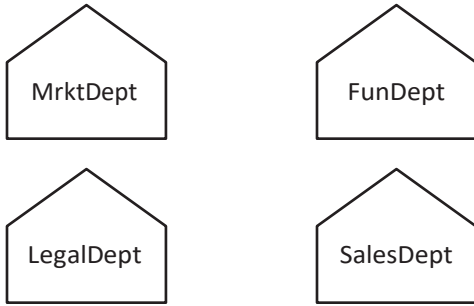
What is it? What is its importance?

OR

What kind of data gets stored in cookies and how is it useful?

- (f) Give two differences between public cloud and private cloud. (2)
- (g) Name the network tools used in the given situation— (3)
- (i) To troubleshoot internet connection problems
 - (ii) To see the IP address associated with a domain name
 - (iii) To look up the registration record associated with a domain name

- (h) SunRise Pvt. Ltd. is setting up the network in Ahmedabad. There are four departments—MrktDept, FunDept, LegalDept, SalesDept. (4)



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

- Suggest the network type between the Departments and specify topology.
- Suggest the most suitable building to place the server with a suitable reason.
- Suggest the placement of (i) modem, (ii) Hub/Switch in the network.
- 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.

SECTION-C

- Which statement in SQL is used to sort the fetched data in either ascending or descending according to one or more columns? (1)
 - Which method is used to retrieve all rows and single row? (1)
 - Name the types of networks depending upon geographical location. (1)
 - Start project command creates four basic Django projects in Directory. Write any two file Names. (1)
 - Consider the table 'empsalary'. (2)

eid	esalary
101	40000
102	NULL
104	51000
107	NULL

To select tuples with some esalary, Vikram has written the following erroneous SQL statement:

SELECT eid, esalary FROM empsalary WHERE esalary = something;

Write the correct SQL statement.

- Give any two differences between GET and POST submission methods of HTML form. (2)
- Write a MySQL-Python connectivity to retrieve data, one record at a time, from city table for employees with id less than 10. (3)

(h) Study the following tables STAFF and SALARY and write SQL command for the questions (a) to (d). (4)

Table: STAFF

ID	NAME	DEPT	SEX	EXPERIENCE
101	Siddharth	Sales	M	12
104	Raghav	Finance	M	6
107	Naman	Research	M	10
114	Nupur	Sales	F	3
109	Jhanvi	Finance	F	9
105	Rama	Research	M	10
117	James	Sales	F	3
111	Binoy	Finance	F	12
130	Samuel	Sales	M	15

Table: SALARY

ID	Basic	Allowance	Commission
101	15000	1500	800
104	17000	1200	500
107	16000	1000	200
114	20000	2200	550
109	18000	1000	250
105	15000	1200	150
117	18000	1700	100
111	20000	1500	300
130	18000	1200	500

- (i) Display NAME of all the staff members who are in SALES having more than 10 years' experience from the table staff.
- (ii) Display the average Basic Salary of all staff members working in "Finance" department using the tables staff and salary.
- (iii) Display the minimum ALLOWANCE of female staff.
- (iv) Display the highest commission among all male staff.

SECTION-D

5. (a) Name any one open source operating system and open source browser. (1)
- (b) Define cyber forensics. (1)
- (c) What is meant by intellectual property? What are the provisions for protecting intellectual property in India? (2)
- (d) How does technology affect society? Give two points in favour of technology and two points against it. (2)
- (e) Write any four steps that you can take to protect yourself from online phishing. (2)
- (f) If Aadhaar is a unique ID, what is its importance? What makes generation of a duplicate Aadhaar card impossible? (2)

