

**Computer Science (083)**

**Time Allowed: 3 hours**

1. This question paper contains five sections, Section A to E.
2. All questions are compulsory.
3. Section A have 18 questions carrying 01 mark each.
4. Section B has 07 Very Short Answer type questions carrying 02 marks each.
5. Section C has 05 Short Answer type questions carrying 03 marks each.
6. Section D has 03 Long Answer type questions carrying 05 marks each.
7. Section E has 02 questions carrying 04 marks each. One internal choice is given in Q35 against part c only.
8. All programming questions are to be answered using Python Language only.

1. State true or false:  
A list may contain any type of objects except another list.
2. Which of the following join gives the intersection of two tables?

a) Inner join                      b) Outer join

c) Equi join                        d) None of these
3. Which value type does input( ) return?

a) Float                              b) Boolean

c) Int                                 d) String
4. Which of the following is a procedural language?

a) Relational Algebra              b) Query Language

c) Tuple Relational Calculus      d) Domain Relational Calculus
5. Protective covering that protects the optical fiber from outside environment is known as

a) Core                                b) Jacket

c) Buffer                               d) Cladding
6. Which function is used to write all the characters?

a) writecharacters( )                b) writeall( )

c) write( )                              d) writeallchars( )

7. Aggregate functions are also known as [1]  
 a) group functions                      b) Add function  
 c) group method                      d) sum function
8. A database \_\_\_\_\_ is a special control structure that facilitates the row by row processing of records in the resultset. [1]  
 a) query                      b) table  
 c) fetch                      d) cursor
9. A \_\_\_\_\_ can get input from live interaction through keyboard/GUI or it may take input as command line arguments or from the files. [1]  
 a) Code                      b) Program  
 c) Class                      d) Method
10. Which of the following real time examples is based on Insertion sort? [1]  
 a) database scenarios and distributes scenarios                      b) arranging books on a library shelf  
 c) real-time systems                      d) arranging a pack of playing cards
11. What is the default return value for a function that does not return any value explicitly? [1]  
 a) double                      b) None  
 c) null                      d) int
12. Which of the following four code fragments will yield the following output? [1]  
 Eina  
 Nina  
 Dika  
 Select all of the function calls that result in this output  
 a) print('Eina  
     Nina  
     Dika')                      b) print('Eina\nNina\nDika')  
 c) print(' ' ' EinaMinaDika' ' ')                      d) print("""Eina  
     Nina  
     \nDika""")
13. Which mobile system is known as Universal Mobile Telecommunications System? [1]  
 a) 1G                      b) 2G



- c) 3G d) 4G
14. Computer communication signal which is in the form of the continuous wave is called [1]  
a) modulation signal b) Binary signal  
c) digital signal d) analog signal
15. What is the output of this expression,  $3*1**3$ ? [1]  
a) 1 b) 27  
c) 9 d) 3
16. **Assertion (A):** If two variables are defined with the same name with the two different scopes, then the variable treated as local variable. [1]  
**Reason (R):** We can not access a local variable globally.  
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.
17. Network congestion occurs: [1]  
a) in case of traffic overloading b) none of these  
c) when a system terminates d) when connection between two nodes terminates
18. **Assertion (A):** By using open() we create an empty file. [1]  
**Reason (R):** By using "x" access mode we can open a file, returns an error if the file exists.  
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

19. Draw a flow chart to find the factorial of any number. [2]  
OR  
How to traverse a string using for loop?
20. What are the steps followed in checksum generator? [2]
21. Write Python code to insert following records into the order-details table. [2]  
Database → sales  
User id → Admin  
Password → salar345  
table name → order-details





ORDNUMB	PARTNUMB	NUMBORD	QUOTPRIC
12489	AX12	11	14.95
12495	BT04	1	402.99
12491	BZ66	1	311.95
12498	CX11	2	57.95

22. Predict the output of the following code: [2]

```
num = 1
def myfunc():
    num = 10
    return num
print num
print myfunc()
print num
```

23. How can you add following data in empty dictionary? [2]

Keys	Values
A	One
B	Two
C	Three
D	Four

OR

Identify the types of following literals.

False	'True'	"False"
45345	00434	435.3

24. Answer: [2]

- Which package must be imported in Python to create a database connectivity application?
- Write the command to add a column salary in table Employee.

25. What do you understand by [2]

- stdin
- stdout
- stderr?

OR

Identify the error in the following code.

- f = open('/tmp/workfile', 'r+')
- f.write('0123456789abcdef')
- f.write('xyz8466')



4. f.close()
5. f.seek(0)
6. f.read()

### Section C

26. Differentiate between char(n) and varchar(n) data types with respect to databases. [3]

OR

What are different types of SQL functions?

27. Answer: [3]

- (i) Write the suitable method's name for the below conditions.
  - i. Adds an element in the end of list.
  - ii. Returns the index of first occurrence.
  - iii. Adds contents of list2 to the end of list1.
- (ii) Find the error in following code. State the reason of the error.  

```
aLst = {'a' : 1, 'b' : 2, 'c' : 3}
print (aLst['a', 'b'])
```

28. Write a function that takes a sorted list and a number as an argument. Search for the number in the sorted list using binary search. [3]

29. Write definition of a method OddSum(NUMBERS) to add those values in the list of NUMBERS, which are not even. [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 a code to open a file readme.txt and print all its contents. Report an error if the file doesn't exists. [3]

### Section D

31. Write the Push operation of stack containing person names. Notice that the name should only accept characters, spaces and period (.) except digits. Assume that Pname is a class instance attribute. [5]
32. Study the following tables DOCTOR and SALARY and write SQL commands for the questions (i) to (v). [5]

TABLE: DOCTOR

ID	NAME	DEPT	SEX	EXPERIENCE
101	John	ENT	M	12
104	Smith	ORTHOPEDIC	M	5
107	George	CARDIOLOGY	M	10
114	Lara	SKIN	F	3
109	K George	MEDICINE	F	9
105	Johnson	ORTHOPEDIC	M	10
117	Lucy	ENT	F	3
111	Bill	MEDICINE	F	12
130	Morphy	ORTHOPEDIC	M	15

**TABLE: SALARY**

ID	BASIC	ALLOWANCE	CONSULTATION
101	12000	1000	300
104	23000	2300	500
107	32000	4000	500
114	12000	5200	100
109	42000	1700	200
105	18900	1690	300
130	21700	2600	300

- Display NAME of all doctors who are in MEDICINE department having more than 10 yrs experience from the table DOCTOR.
- Display the average salary of all doctors working in ENT department using the tables DOCTOR and SALARY.  $SALARY = BASIC + ALLOWANCE$ .
- Display the minimum ALLOWANCE of female doctors.
- Display the highest consultation fee among all male doctors.
- To display the detail of doctor who have experience more than 12 years.

OR

Write SQL queries for (i) to (iv) and find outputs for SQL queries (v) to (viii), which are based on the tables TRANSPORT and TRIP.

**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:**

- PERKM is Freight Charges per kilometre
- 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	Raj pal Kirti	2016-06-06	200	101	25

**Note:**

- NO is Driver Number
  - KM is Kilometre travelled
  - NOP is number of travellers travelled in a vehicle
  - TDATE is Trip Date
- To display NO, NAME, TDATE from the table TRIP in descending order of NO.
  - To display the NAME of the drivers from the table TRIP, who are travelling by transport vehicle with code 101 or 103.
  - To display the NO and NAME of those drivers from the table TRIP who travelled between 2015-02-10 and 2015-04-01.
  - To display all the details from table TRIP in which the distance travelled is more than 100 KM in ascending order of NOP
  - SELECT COUNT (\*), TCODE From TRIP  
GROUP BY TCODE HAVING COUNT (\*) > 1;
  - SELECT DISTINCT TCODE from TRIP;
  - SELECT A.TCODE, NAME, TTYPE  
FROM TRIP A, TRANSPORT B  
WHERE A.TCODE = B. TCODE AND KM < 90;
  - SELECT NAME, KM \* PERKM  
FROM TRIP A, TRANSPORT B  
WHERE A. TCODE = B. TCODE AND A. TCODE = '105';

33. Answer (i) & (ii) OR (iii) & (iv)

[5]

- What is the pickling process? What is its need?
- A file phonebook.dat stores the details in the following format:  
Name Phone  
Jivin 86666000  
Kriti 101001

Write a program to edit the phone numbers of Arvind in the file. If there is no record for Arvind report error.

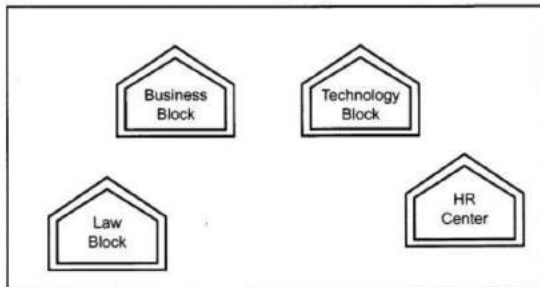
- (iii) Define the following terms:
  - i. dump() method
  - ii. load() method
- (iv) Write a function CountHisHer() in Python which reads the contents of a text file "Story.txt" and counts the words His and Her (not case sensitive).

### Section E

34. Read the text carefully and answer the questions:

[4]

Quick Learn University is setting up its Academic blocks at Prayag Nagar and planning to set up a network. The university has 3 academic blocks and one Human Resource Center as shown in the diagram below:



Center to center distances between various blocks is as follows:

Law Block to Business Block	40 m
Law Block to Technology Block	80 m
Law Block to HR Center	105 m
Business Block to Technology Block	30 m
Business Block to HR Center	35 m
Technology Block to HR Center	15 m

Number of Computers in each of the Blocks/Center is as follows:

Law Block	15
Technology Block	40
HR Center	115
Business Block	25

- (i) Suggest the most suitable place (i.e., Block/Center) to install the server of this university with a suitable reason.
- (ii) What type of network will be formed if all these blocks are connected?
- (iii) Which device you will suggest to be placed/installed in each of these blocks/center to efficiently connect all the computers within these blocks/center?

OR



The university is planning to connect its admission office in the closest big city, which is more than 250 km from university, which type of network out of LAN, MAN or WAN will be formed? Justify your answer.

35. Read the text carefully and answer the questions:

[4]

Consider the following tables STORE and SUPPLIERS:

**Table: STORE**

ItemNo	Item	Scode	Qty	Rate	LastBuy
2005	Sharpener Classic	23	60	8	31-Jun-09
2003	Ball Pen 0.25	22	50	25	01-Feb-10
2002	Gel Pen Premium	21	150	12	24-Feb-10
2006	Gel Pen Classic	21	250	20	11-Mar-09
2001	Eraser Small	22	220	6	19-Jan-09
2004	Eraser Big	22	110	8	02-Dec-09
2009	Ball Pen 0.5	21	180	18	03-Nov-09

**Table: SUPPLIERS**

Scode	Sname
21	Premium Stationers
23	Soft Plastics
22	Tetra Supply

- (i) Write SQL commands for the following statements:
  - i. To display details of all the items in the STORE table in ascending order of LastBuy.
  - ii. To display ItemNo and Item name of those items from STORE table whose Rate is more than 15 Rupees.
- (ii) Write SQL commands for the following statements:
  - i. To display the details of those items whose supplier code (Scode) is 22 or Quantity in Store (Qty) is more than 110 from the table Store.
  - ii. To display minimum Rate of items for each supplier individually as per Scode from the table STORE.
- (iii) Give the output of the following SQL queries:
  - i. SELECT COUNT(DISTINCT Scode) FROM STORE;
  - ii. SELECT Rate\* Qty FROM STORE WHERE ItemNo = 2004;



# SOLUTION

## Section A

1. **(b)** False  
**Explanation:** False  
A list may contain any type of objects
2. **(a)** Inner join  
**Explanation:** Inner join
3. **(d)** String  
**Explanation:** The input() function converts the value into string type. You need to explicitly convert the value into a different type in your code using typecasting int(), float(), bool().
4. **(a)** Relational Algebra  
**Explanation:** All others are non procedural language.
5. **(c)** Buffer  
**Explanation:** Core is the part through which light travels.  
Cladding covers the core and reflects light back to it.  
Buffer is the fiber protection.  
Jacket is not in the context.
6. **(c)** write( )  
**Explanation:** The write() method writes specified text to the file.
7. **(a)** group functions  
**Explanation:** group functions
8. **(d)** cursor  
**Explanation:** cursor
9. **(b)** Program  
**Explanation:** Program
10. **(d)** arranging a pack of playing cards  
**Explanation:** arranging a pack of playing cards
11. **(b)** None  
**Explanation:** None
12. **(b)** print('Eina\nNina\nDika')  
**Explanation:** '\n' escape sequence is used for new line character in string.
13. **(c)** 3G  
**Explanation:** The idea behind 3G is to have a single network standard instead of the different types adopted in the US, Europe, and Asia and therefore also known as Universal Mobile Telecommunications System (UMTS) or IMT-2000.
14. **(d)** analog signal  
**Explanation:** Analog Signal, a continuous time varying signal, which represents a time varying quantity.
15. **(d)** 3  
**Explanation:** First, this expression will solve  $1^{**}3$  because exponential has higher precedence than multiplication, so  $1^{**}3 = 1$  and  $3*1 = 3$ . The final answer is 3.
16. **(b)** Both A and R are true but R is not the correct explanation of A.  
**Explanation:** If two variables are defined with the same name with the two different



scopes, i.e., local and global, then the priority will always be given to the local variable. We can not access a local variable globally as all the variables defined inside a function have a local scope that is limited to the function.

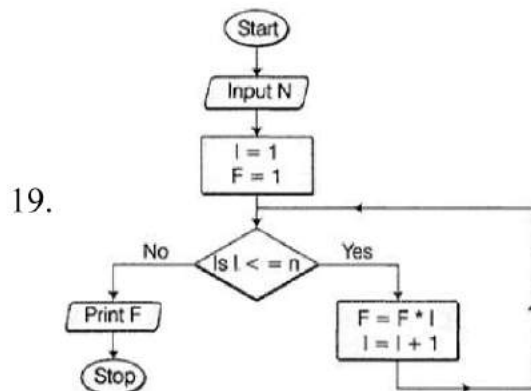
17. (a) in case of traffic overloading

**Explanation:** Network congestion occurs when a network (or a portion of the network) or a network node is overloaded with data. Congestion can happen for a variety of reasons, but regardless of the cause, it can be a huge problem for companies. They annoy both customers and employees alike and reduce an enterprise's productivity.

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

**Explanation:** To create a new file in python, we use the open() method. In x mode, python will create a file, returns an error if the file already exists.

### Section B



OR

for statement can iterate over the elements of a sequence or string. It is used when you want to traverse all characters of string.

e.g.

```

sub = "PYTHON"
for i in sub:
    print(i, "end=")
  
```

**Output P Y T H O N**

20. The sender, which is the checksum generator, follows these steps:

- i. The units are divided into k sections each of n bits.
- ii. All sections are added together using 1's complement to get the sum.
- iii. The sum is complemented and becomes the checksum.
- iv. The checksum is sent with the data.
- v. The data along with the checksum value is transmitted to the receiver.

21. import MySQLdb

```

db=MySQLdb.connect('localhost', 'sales', 'Admin', 'salar345')
cursor= db. cursor (prepared= TRUE)
sql_query= """INSERT INTO order-details (ORDNUMB, PARTNUMB,
NUMBORD,QUOTPRIC) VALUES ('%s', '%s', '%s', '%s')"""
rec_inst= [('12489', 'AX12', '11', '14.95'), ('12491', 'ABT04', '1', '402.99'), ('12495',
'BZ66', '1', '311.95'),
('12498', 'CX11', '2', '57.95')]
  
```





```

try:
    cursor.executemany(sql_query, rec_inst)
    print(cursor.rowcount, "Record inserted successfully")
    db.commit()
except:
    db.rollback()
    cursor.close()
    db.close()

```

22. Output of the code is:

```

1
10
1

```

print num prints the value of num before calling myfunc().  
 print myfunc() returns the local value of num(10) and prints it.  
 print num prints again the value of num after calling myfunc() i.e, 1 because the myfunc() function does not affect the global value of variable num.

23. dic = { }  
 dic['A'] = 'One'  
 dic[' B'] = 'Two'  
 dic['C'] = 'Three'  
 dic['D'] = 'Four'

OR

False	Boolean
'True'	String
"False"	String
45345	Integer
00434	Integer (octal)
435.3	Floating point

24. Answer:

- (i) Before you can access MySQL databases using Python, you must install one or more packages in a virtual environment: mysqlclient: This package contains the MySQLdb module one of the most commonly used Python packages for MySQL
- (ii) ALTER TABLE Employee ADD salary Int(10);

25. These are standard input, output and error devices:

- i. **standard input device (stdin)**. It is implemented in the form of a file to read from the device keyboard.
- ii. **standard output device (stdout)**. It is implemented in the form of a file to print to the display device (the monitor) and can be redirected as standard input.
- iii. **standard error device (stderr)**. It is the same as stdout but normally only for errors.

OR

The lines 5 and 6 will raise the error as no operation can take place in a closed file - file is closed at line 4. Since the file is opened in read as well write mode, we just



need to bring line 4 at the end of the code.

### Section C

26. Differentiate between char(n) and varchar(n) are as follows

char(n)	varchar(n)
It stores a fixed length string between 1 and 255 characters.	It stores a variable length string.
If the value is of smaller length, then it adds blank spaces.	No blanks are added by varchar(n) even if value is of smaller length.
Some space is wasted in it.	No wastage of space in varchar(n).

OR

There are two types of SQL functions;

- Single Row (or Scalar) functions, work with a single row at a time. A single row function returns a result for every row of a queried table.
- Multiple Row (or Group or Aggregate) functions, work with data of multiple rows at a time and return aggregated value.

27. Answer:

- append()
- index()
- extend()

(ii) The above code will produce KeyError, the reason being that there is no key same as the list ['a', 'b'] in dictionary aLst. It seems that the above code intends to print the values of two keys 'a' and 'b', thus we can modify the above code to perform this as:

```
aLst = {'a' : 1, 'b' : 2, 'c' : 3}
```

```
print (aLst['a'], aLst['b'])
```

Now it will give the result as:

```
1 2
```

28. `def binary_search(sorted_list, number):`

```
    low = 0
```

```
    high = len(sorted_list)
```

```
    found = False
```

```
    while (low < high) and found = False:
```

```
        mid = int(low+high/2)
```

```
        if sorted_list[mid] == number:
```

```
            print ("Number found at",mid)
```

```
            found = True
```

```
            break
```

```
        elif sorted_list[mid] == number:
```

```
            low = mid + 1
```

```
        else:
```

```
            high = mid -1
```

```
        if low >= high:
```

```
            print ("Number not found")
```

```

max_range = input("Enter Count of numbers:")
numlist = []
for i in range(0, max_range):
    numlist.append(input("Enter number : "))
numlist.sort()
print ("Our list : ", numlist)
number = input("Enter the number")
binary_search(numlist, number)
29. def OddSum(NUMBERS) :
    odd_sum = 0
    for num in range (len(NUMBERS)):
        if (NUMBERS[num] % 2 != 0:
            odd_sum = odd_sum + NUMBERS [num]
    print odd_sum

```

OR

- i. Parameter
  - ii. Named argument
  - iii. Argument
  - iv. Default value
  - v. Named/keyword arguments
  - vi. Global Variable
  - vii. Local Variable
30. try:
- ```

fileObject = open("readme.txt")
content = fileObject.read ()
print(content)
fileObject.close()
except IOError:
    print("File doesn't Exist")

```

### Section D

```

31. def insert():
    name_pattern = re.compile(r"[A-Za-zs.]")
    while True:
        n = input("Enter name:")
        while name_pattern.search(n):
            print("Invalid name")
            print("Enter name correctly")
            n = input()
        Sname.append(n)
        c = input("Enter more name <y/n>").upper()
        if (c!='y'):
            break

```

32. i. SELECT NAME FROM DOCTOR WHERE DEPT='MEDICINE' AND  
EXPERIENCE > 10;



- ii. SELECT AVG(BASIC + ALLOWANCE) FROM SALARY WHERE SALARY.ID IN(SELECT ID FROM DOCTOR WHERE DEPT='ENT');
- iii. SELECT MIN(ALLOWANCE) FROM SALARY WHERE SALARY.ID IN(SELECT ID FROM DOCTOR WHERE SEX='F');
- iv. SELECT MAX(CONSULTATION) FROM SALARY WHERE SALARY.ID IN(SELECT ID FROM DOCTOR WHERE SEX='M');
- v. SELECT \* FROM DOCTOR WHERE EXPERIENCED>12;

OR

- i. SELECT NO, NAME, TDATE FROM TRIP ORDER BY NO DESC
- ii. SELECT NAME FROM TRIP WHERE TCODE = 101 OR TCODE = 103;
- iii. SELECT NO, NAME FROM TRIP WHERE TDATE BETWEEN( '10-FEB-2015' AND '01-APR-2015');
- iv. SELECT NO, NAME, TDATE, KM, TCODE FROM TRIP WHERE KM >100 ORDER BY NOP;

|    |   |     |
|----|---|-----|
| v. | 2 | 101 |
|    | 1 | 103 |
|    | 2 | 102 |
|    | 1 | 104 |
|    | 1 | 105 |

- vi. 103
- 104
- 105

|       |       |           |      |
|-------|-------|-----------|------|
| vii.  | 104   | Aan Kumar | CAR  |
|       | 105   | Veena     | SUV  |
| viii. | VEENA |           | 3200 |

33. Answer (i) & (ii) OR (iii) & (iv)

- (i) Objects have a specific structure that must be maintained while storing or accessing them. Python provides a special module - the pickle module to take care of that. The pickling process serializes the objects and converts them into byte streams so that they can be stored in binary files.
- (ii) 

```
fp1 = open("phonebook.dat", 'w+')
list = " "
while list:
pos = ftell()
list = fp1.readline ()
name, phone = list.split ()
if name == "Arvind":
phone = raw_input ("Enter a number:")
fp.seek (pos,o)
fp.write (name)
fp.write (" ")
```



```
fp.write(phone)
fp.close()
break
else:
print("Name\"Arvind\" not found")
```

- (iii) i. This method is used to write objects to a file. Before use the dump() method, you first have to import the pickle module.

**Syntax**

```
import pickle
.....
.....
.....
pickle.dump(object_to_pickle, FileObject)
```

- ii. This method is used to load data from a binary file.

**Syntax**

```
import pickle
.....
.....
.....
object=pickle.load (FileObject)
```

It is important to know that pickle.load() method would raise EOFError when you reach end of file while reading from file.

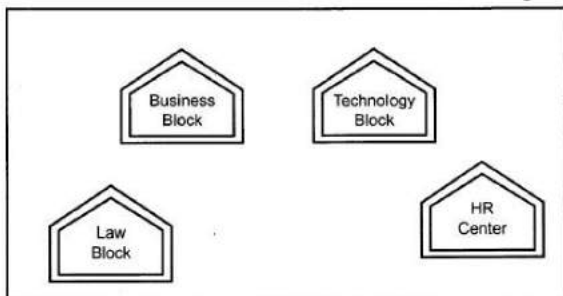
- (iv) CountHisHer function counts the number of occurrences of the words His and Her in the file story.txt.

```
def CountHisHer():
wordlist=[line.strip() for line in open('story.txt')]
# Searching for a word in a file
count =0
for word in wordlist:
words = word.split(" ")
for word in words:
#Remove all leading and trailing white spaces
word =word.strip().lower()
if word == 'his' or word=='her':
count = count + 1
if count == 0:
print("not found in file")
else:
print ("count=", count)
Example: If contents of story.txt is
Pankaj has gone to his friend's house.
His friend's name is Ramya.
Her house is 3 km from his house.
Output would be: count = 4
```

**Section E**

**34. Read the text carefully and answer the questions:**

Quick Learn University is setting up its Academic blocks at Prayag Nagar and planning to set up a network. The university has 3 academic blocks and one Human Resource Center as shown in the diagram below:



Center to center distances between various blocks is as follows:

|                                    |       |
|------------------------------------|-------|
| Law Block to Business Block        | 40 m  |
| Law Block to Technology Block      | 80 m  |
| Law Block to HR Center             | 105 m |
| Business Block to Technology Block | 30 m  |
| Business Block to HR Center        | 35 m  |
| Technology Block to HR Center      | 15 m  |

Number of Computers in each of the Blocks/Center is as follows:

|                  |     |
|------------------|-----|
| Law Block        | 15  |
| Technology Block | 40  |
| HR Center        | 115 |
| Business Block   | 25  |

- (i) The most suitable place to install the server is HR Centre because it has maximum number of computers.  
 (ii) LAN  
 (iii) Switch

OR

WAN as it is another city. LAN and MAN cannot cover 250 km.

**35. Read the text carefully and answer the questions:**

Consider the following tables STORE and SUPPLIERS:

**Table: STORE**

| ItemNo | Item              | Scode | Qty | Rate | LastBuy   |
|--------|-------------------|-------|-----|------|-----------|
| 2005   | Sharpener Classic | 23    | 60  | 8    | 31-Jun-09 |
| 2003   | Ball Pen 0.25     | 22    | 50  | 25   | 01-Feb-10 |
| 2002   | Gel Pen Premium   | 21    | 150 | 12   | 24-Feb-10 |
| 2006   | Gel Pen Classic   | 21    | 250 | 20   | 11-Mar-09 |
| 2001   | Eraser Small      | 22    | 220 | 6    | 19-Jan-09 |





|      |              |    |     |    |           |
|------|--------------|----|-----|----|-----------|
| 2004 | Eraser Big   | 22 | 110 | 8  | 02-Dec-09 |
| 2009 | Ball Pen 0.5 | 21 | 180 | 18 | 03-Nov-09 |

**Table: SUPPLIERS**

| Scode | Sname              |
|-------|--------------------|
| 21    | Premium Stationers |
| 23    | Soft Plastics      |
| 22    | Tetra Supply       |

- (i) i. SELECT \* FROM STORE ORDER BY LastBuy;  
 ii. SELECT ItemNo, Item FROM STORE WHERE Rate > 15;
- (ii) i. SELECT \* FROM STORE WHERE (Scode = 22 OR Qty > 110);  
 ii. SELECT Sname, MIN(Rate) FROM STORE, SUPPLIERS WHERE STORE.  
 Scode = SUPPLIERS.Scode GROUP BY Snam
- (iii) i. 3  
 ii. 880