

Time Allowed: 3 hours

**Sample Question Paper - 5
Class: XII Session: 2023-24
Computer Science (083)**

Maximum Marks: 70

General Instructions:

- Please check this question paper contains 35 questions.
- The paper is divided into 4 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.
- All programming questions are to be answered using Python Language only.

Section A

1. State true or false: **[1]**
A list may contain any type of objects except another list.
2. What is the meaning of "HAVING" clause in SELECT query? **[1]**
 - a) To filter out the row groups
 - b) To filter out the column groups
 - c) None of these
 - d) To filter out the row and column values
3. The SQL statements to access and manipulate data in existing table is/are: **[1]**
 - a) System Control Statements
 - b) Session Control Statements
 - c) DDL
 - d) DML
4. Which shortcut key is used to pause the function? **[1]**
 - a) Alt + Break
 - b) Insert + Break
 - c) Ctrl + Break
 - d) Shift + Break
5. Which mobile system is known as Universal Mobile Telecommunications System? **[1]**
 - a) 1G
 - b) 2G
 - c) 3G
 - d) 4G

- A. Zip files
- B. Text files
- C. Video files
- D. Binary files

- a) A and D
- b) B and D
- c) A and B
- d) D and C

7. Which of the following data models is an extension of relational data model? [1]

- a) None of these
- b) Semi structured data model
- c) Object - oriented data model
- d) Object - relational data model

8. Consider the table with structure as: [1]
Student(ID, name, dept name, tot_cred)
Which attribute will form the primary key?

- a) Dept
- b) ID
- c) Total credits
- d) Name

9. To open a file c:\core.txt for writing, we can use: [1]

- a. file = open("//c: \core.txt", "w")
- b. file = open("c:\ \core.txt", "w")
- c. file = open(r"c: \ core.txt", "w")
- d. file = open(file = "c:\core.txt", "w")
- e. file = open(file = "c: \ \ core.txt", "w")
- f. file = open("//c:\ res.txt")

- a) c, f
- b) a, e
- c) d, f
- d) b, c

10. Non-void functions are also known as [1]

- a) Invalid functions
- b) Valid functions
- c) Fruitful functions
- d) Non functions

a) Empty

b) Underflow

c) Overflow

d) Garbage collection

12. Carefully observe the code and give the answer. [1]

```
def function1(a):  
a = a + '1'  
a = a * 2  
>>>function1("hello")
```

a) hello2

b) cannot perform mathematical operation on strings

c) hello2hello2

d) indentation error

13. State true or false: [1]

Big networks can be of peer-to-peer types.

14. Given a list L = [10, 20, 30, 40, 50, 60, 70], what would L[1 : 4] return? [1]

a) [30, 40, 50]

b) [20, 30, 40]

c) [20, 30, 40, 50]

d) [10, 20, 30, 40]

15. Fill in the blanks: [1]

The SQL built-in function _____ totals values in numeric columns.

16. Find ODD parity bit for 11100011 [1]

a) 1

b) 2

c) none of these

d) 0

17. **Assertion (A):** While creating series by specifying data as a scalar value, the index must be provided. [1]

Reason (R): The scalar value is repeated to match the length of the index.

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.

18. **Assertion (A):** The chdir() method is used to change the current working directory to a specified directory. [1]

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. **Answer:** [2]

(i) i. Mahesh wants to transfer data within a city at very high speed. Write the wired transmission medium and type of network that he should use. [1]

ii. Your friend wishes to install a wireless network in his office. Explain to him the difference between guided and unguided media. [1]

(ii) **OR**

i. What measures do wireless networks employ to avoid collisions? [2]

20. Differentiate between CHAR and VARCHAR data types. [2]

21. Find the errors in the following code and write the correct code. [2]

```
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.

OR

Write a program to obtain length, breadth and height of a cuboid and calculate its volume.

22. **Answer:** [2]

(i) Can one DB-API be used for all database types? [1]

(ii) Write the command to add a column salary in table Employee. [1]

23. What will be the output? [2]

```
dic = {'One':1,'Two':2,'Three':3}
```

```
print(list(dic.values()))
```

your answer.

24. Identify the error in the following code: [2]
1. import pickle
 2. data = ['one', 2, [3, 4, 5]]
 3. with open('data2.dat', 'rb') as f:
 4. pickle.dump(data, f)

OR

Write a function to split a path completely into directory names.

25. Find the error : [2]
- ```
def minus (total, decrement)
output = total - decrement
return output
```

### Section C

26. **Answer:** [3]

- (i) What is the output of the following? [1.5]

```
i = 4
while True:
if i% 0o8 == 0:
break
print(i, end = ' ')
i += 1
```

- (ii) If you are asked to label the Python loops as determinable or non-determinable, which label would you give to which loop? Justify your answer. [1.5]

27. Write a function that takes a number n and then returns a randomly generated number having exactly n digits (not starting with zero) e.g., if n is 2 then the function can randomly return a number 10-99 but 07, 02, etc., are not valid two-digit numbers. [3]

28. Write the output for SQL queries (i) to (iii), which are based on the table CUSTOMER. [3]

| TABLE: CUSTOMER |           |        |     |       |
|-----------------|-----------|--------|-----|-------|
| CID             | CNAME     | GENDER | SID | AREA  |
| 1001            | R SHARMA  | FEMALE | 101 | NORTH |
| 1002            | MR TIWARY | MALE   | 102 | SOUTH |
| 1003            | MK KHAN   | MALE   | 103 | EAST  |

|      |                 |        |     |       |
|------|-----------------|--------|-----|-------|
| 1005 | S SEN           | FEMALE | 101 | WEST  |
| 1006 | R DUBEY         | MALE   | 104 | NORTH |
| 1007 | M AGARWAL       | FEMALE | 104 | NORTH |
| 1008 | S DAS           | FEMALE | 103 | SOUTH |
| 1009 | RK PATIL        | MALE   | 102 | NORTH |
| 1010 | N KRISHNA MURTY | MALE   | 102 | SOUTH |

- i. SELECT COUNT(\*), GENDER FROM CUSTOMER  
GROUP BY GENDER;
- ii. SELECT CNAME FROM CUSTOMER WHERE  
CNAME LIKE 'L%';
- iii. SELECT DISTINCT AREA FROM CUSTOMER;

OR

Write the queries for the following questions using the table Item with the following fields.

(Item\_Code, Item\_Name, Quantity, Price)

- i. Display the price 500 of item having code as 106.
- ii. Display the names of all items with quantity greater than 50 and price less than 500.
- iii. Display the item code of all items with quantity less than 70.

29. Write a program to use pickle module for reading and writing binary files. [3]

30. Consider a function with following header: [3]

```
def info(object, spacing = 10, collapse = 1)
```

Here are some function calls given below. Find out which of these are correct and which of these are incorrect stating reasons?

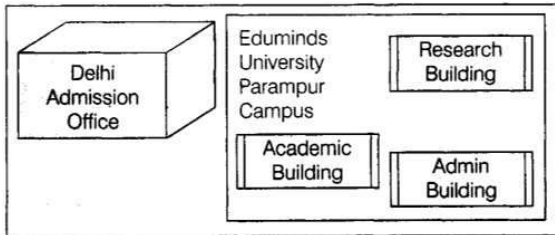
For correct function call statements, specify the argument values too.

- i. info(obj1)
- ii. info(spacing=20)
- iii. info(obj2, 12)
- iv. info(obj11, object = obj12)
- v. info(obj3, collapse = 0)
- vi. info( )
- vii. info(collapse = 0, obj3)
- viii. info( spacing = 15, object = obj4)

- 3 . Eduminds University of India is starting its campus in a small town Parampur of Central India with its centre admission office in Delhi. The university has three major buildings comprising of Admin building, Academic building and Research building in 5 km area campus.

1

As a network expert, you need to suggest the network plan as per (i) to (v) to the authorities keeping in mind the distances and other given parameters.



#### Expected wire distance between various locations

|                                           |         |
|-------------------------------------------|---------|
| Research Building to Admin Building       | 90 m    |
| Research Building to Academic Building    | 80 m    |
| Academic Building to Admin Building       | 15 m    |
| Delhi Admission Office to Parampur Campus | 1450 km |

#### Expected number of computers to be installed at various locations in the university are as follows

|                        |     |
|------------------------|-----|
| Research Building      | 20  |
| Academic Building      | 150 |
| Admin Building         | 35  |
| Delhi Admission Office | 5   |

- i. Suggest the authorities, the cable layout amongst various buildings inside the university campus for connecting the buildings.
- ii. Suggest the most suitable place (i.e. building) to house the server of this organisations with a suitable reason.
- iii. Suggest an efficient device for the following to be installed in each of the building to connect all the computers
  - a. Gateway
  - b. Modem
  - c. Switch

between admission building located in Delhi and the campus located in Parampur form the following options:

- Telephone line
- Fixedline dial-up connection
- Co-axial cable network
- GSM
- Leased line
- Satellite connection.

v. University is planning to connect its campus in Delhi which is less than 100 km. Which type of network will be formed?

3 . Consider the following tables CABHUB and CUSTOMER and answer (b) and (c) parts of this question: [5]

**Table: CABHUB**

2

| Vcode | VehicleName | Make     | Colour | 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   |

a. Give a suitable example of a table with sample data and illustrate Primary and alternate Keys in it.



- b. Write SQL commands for the following statements:
- i. To display the names of all the white-colored vehicles.
  - ii. To display the name of vehicle name and the capacity of vehicles in ascending order of their sitting capacity.
  - iii. To display the highest charges at which a vehicle can be hired from CABHUB.
  - iv. To display the customer name and the corresponding name of the vehicle hired by them.
- c. 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 Vehicle FROM CABHUB WHERE Capacity=4;

OR

Consider the following table GARMENT. Write SQL commands for the following statements.

Table: **GARMENT**

| GCODE | Description    | Price | FCODE | READY DATE  |
|-------|----------------|-------|-------|-------------|
| 10023 | PENCIL SKIRT   | 1150  | F03   | 19-DEC-08 j |
| 10001 | FORMAL SHIRT   | 1250  | F01   | 12-JAN-08   |
| 10012 | INFORMAL SHIRT | 1550  | F02   | 06-JUN-08   |
| 10024 | BABY TOP       | 750   | F03   | 07-APR-07   |
| 10090 | TULIP SKIRT    | 850   | F02   | 31-MAR-07   |
| 10019 | EVENING GOWN   | 850   | F03.  | 06JUN-08    |
| 10009 | INFORMAL PANT  | 1500  | F02   | 20OCT-08    |
| 10017 | FORMAL PANT    | 1350  | F01   | 09-MAR-08   |
| 10020 | FROCK          | 850   | F04   | 09-SEP-07   |
| 10089 | SLACKS         | 750   | F03   | 31OCT-08    |

- i. To display GCODE and DESCRIPTION of each GARMENT in descending order of GCODE.

DEC-07 and 16-JUN-08 (inclusive of both the dates).

iii. To display the average PRICE of all the GARMENTS, which are made up of FABRIC with FCODE as F03.

iv. To display FABRIC wise highest and lowest price of GARMENTS from GARMENT table.  
(Display FCODE of each GARMENT along with highest and lowest price)

3 . **Answer:** [5]

(i) i. What is the use of Set Transaction command? [1]

3 ii. Consider the following tables EMPLOYEE and DEPARTMENT and answer (a) and (b) parts of this question. [4]

**Table: EMPLOYEE**

| TCode | TName         | DepCde | Salary | Age | JoinDate    |
|-------|---------------|--------|--------|-----|-------------|
| 15    | Sameer Sharma | 123    | 75000  | 39  | 01-Apr-2007 |
| 21    | Raguvinder K  | 101    | 86000  | 29  | 11-Nov-2005 |
| 34    | Rama Gupta    | 119    | 52500  | 43  | 03-Mar-2010 |
| 46    | C R Menon     | 103    | 67000  | 38  | 12-Jul-2004 |
| 77    | Mohan Kumar   | 103    | 63000  | 55  | 25-Nov-2000 |
| 81    | Rajesh Kumar  | 119    | 74500  | 48  | 11-Dec-2008 |
| 89    | Sanjeev P     | 101    | 92600  | 54  | 12-Jan-2009 |
| 93    | Pragya Jain   | 123    | 32000  | 29  | 05-Aug-2006 |

**Table: DEPARTMENT**

| DepCde | DepName  | DepHead      |
|--------|----------|--------------|
| 101    | ACCOUNTS | Rajiv Kumar  |
| 103    | HR       | P K Singh    |
| 119    | IT       | Yogesh Kumar |
| 123    | RESEARCH | Ajay Dutta   |

- a. Write SQL commands for the following statements:
- To display all DepName along with the DepCde in descending order of DepCde.
  - To display the average age of Employees in DepCde as 103.
  - To display the name of DepHead of the Employee named "Sanjeev P"
  - To display the details of all employees who have joined before 2007 from the EMPLOYEE table.
- b. Give the output of the following SQL queries:
- SELECT COUNT (DISTINCT DepCde) FROM EMPLOYEE;
  - SELECT MAX(JoinDate), MIN (JointDate) FROM EMPLOYEE;
  - SELECT TName, DepHead FROM EMPLOYEE E, DEPARTMENT D WHERE E.DepCde = D.DepCde;
  - SELECT COUNT (\*) FROM EMPLOYEE WHERE Salary > 60000 AND Age > 30;

(ii)

**OR**

- Mention two characteristics of SQL. [1]
- Consider the following tables ACTIVITY and COACH. Write SQL commands for the following statements [4]

**Table: ACTIVITY**

| Acode | ActivityName     | Stadium     | ParticipantsNum | PrizeMoney | ScheduleDate |
|-------|------------------|-------------|-----------------|------------|--------------|
| 1001  | Relay 100 ×<br>4 | Star Annex  | 16              | 10000      | 23-Jan-04    |
| 1002  | High jump        | Star Annex  | 10              | 12000      | 12-Dec-03    |
| 1003  | Shot Put         | Super Power | 12              | 8000       | 14-Feb-04    |
| 1005  | Long Jump        | Star Annex  | 12              | 9000       | 01-Jan-04    |
| 1008  | Discuss Throw    | Super Power | 10              | 15000      | 19-Mar-04    |

| Pcode | Name          | Acode |
|-------|---------------|-------|
| 1     | Ahmad Hussain | 1001  |
| 2     | Ravinder      | 1008  |
| 3     | Janila        | 1001  |
| 4     | Naaz          | 1003  |

- i. To display the names of all activities with their Acodes in descending order.
- ii. To display sum of PrizeMoney for the Activities played in each of the Stadium separately.
- iii. To display the coach's names and Acodes in ascending order of Acode from the table COACH.
- iv. To display the content of all activities for which ScheduleDate is earlier than 01-01-2004 in ascending order of ParticipantsNum.

### Section

- 3 . Write a program that depends upon the user's choice, either pushes or pops an element in a stack. [4]

### E

- 3 . Given the following family relation. Write SQL commands for questions (i) to (v) [4]  
4 based on the table FAMILY

**TABLE: FAMILY**

5

| No. | Name    | Female Members | Male Members | Income | Occupation |
|-----|---------|----------------|--------------|--------|------------|
| 1   | Mishra  | 3              | 2            | 7000   | Service    |
| 2   | Gupta   | 4              | 1            | 50000  | Business   |
| 3   | Khan    | 6              | 3            | 8000   | Mixed      |
| 4   | Chaddha | 2              | 2            | 25000  | Business   |
| 5   | Yadav   | 7              | 2            | 20000  | Mixed      |
| 6   | Joshi   | 3              | 2            | 14000  | Service    |
| 7   | Maurya  | 6              | 3            | 5000   | Farming    |
| 8   | Rao     | 5              | 2            | 10000  | Service    |

- i. To select all the information of family, whose Occupation is Service.
- ii. To list the name of family, where female members are more than 3.
- iii. To list all names of family with income in ascending order.
- iv. To count the number of family, whose income is less than 10000.
- v. To display the detail of family whose income is more than 10000 and occupation is mixed type.

## Section A Answers

1.  
**(b) False**  
**Explanation:** False  
A list may contain any type of objects
2. **(a) To filter out the row groups**  
**Explanation:** A HAVING clause is used to filter values from a group.
3.  
**(d) DML**  
**Explanation:** Data Manipulation Language is used to manipulate data in existing tables, for instance UPDATE, SELECT, DELETE, INSERT.
4.  
**(c) Ctrl + Break**  
**Explanation:** Ctrl + Break
5.  
**(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.
6.  
**(b) B and D**  
**Explanation:** The in-built methods in Python can handle text files and binary files.
7.  
**(d) Object - relational data model**  
**Explanation:** All the data are stored in the form of memory in the disk.
8.  
**(b) ID**  
**Explanation:** ID, A primary key is a key that is unique for each record.
9.  
**(d) b, c**  
**Explanation:** Only file = open("c:\ \core.txt", "w") and file = open(r"c: \ core.txt", "w") are correct statements to open file since the file path should be a proper string and we do not need to provide file keyword before file path.
10.  
**(c) Fruitful functions**  
**Explanation:** Fruitful functions
11.  
**(b) Underflow**

**(d)** indentation error

**Explanation:** Function body i.e, code inside the function starts with indentation.

13.

**(b)** False

**Explanation:** A peer-to-peer (P2P) network is created when two or more PCs are connected and share resources without going through a separate server computer.

14.

**(b)** [20, 30, 40]

**Explanation:** [20, 30, 40]

15. 1. SUM

16.

**(d)** 0

**Explanation:** Parity refers to the number of bits set to 1 in the data item

Even parity - an even number of bits are 1

Odd parity - an odd number of bits are 1

A parity bit is an extra bit transmitted with a data item, chose to give the resulting bits even or odd parity

Odd parity - data: 11100011, parity bit 0

17.

**(c)** A is true but R is false.

**Explanation:** In order to create a Pandas series from an array with an index, we have to provide index with the same number of elements as it is in array.

In order to create a Pandas series from scalar value, an index must be provided. The scalar value will be repeated to match the length of index.

18.

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

**Explanation:** The mkdir() method is used to create a directory in the current working directory and the chdir() method is used to change the current working directory to a specified directory.

### Section B

19. Answer:

(i) i. Wired transmission medium:- Optical fibre cable

Type of network:- MAN (Metropolitan Area Network)

ii. Guided media is a point to point communication to connect computers, it uses cables, whereas unguided media is a wireless communication which transmits the signal through the air.

(ii)

**OR**

i. The wireless networks employ a protocol called CSMA/CA (Carrier Sense Multiple Access with Collision Avoidance) to avoid collisions in the network.

idle i.e., no other node is transmitting data.

Wireless networks use CSMA/CA as they cannot detect collisions; hence they avoid it.

20. The difference between CHAR and VARCHAR is that of fixed length and variable length. CHAR data type is used to store character string of fixed length. When a column is given datatype as CHAR(n), then MySQL ensures that all values stored in that column have this length i.e., n bytes. If a value is shorter than this length n then blanks are added, but the size of value remains n bytes.

On the other hand, VARCHAR datatype is used to store a character string of variable length. When a column is given datatype as VARCHAR(n), then the maximum size value in this column can have is n bytes. Each value that is stored in this column stores exactly as we specify it i.e., no blanks are added if the length is shorter than the maximum length n. However, if we exceed the maximum length n, then an error message is displayed.

21. `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)
```

OR

```
l = int(input("Enter the length of the cuboid:"))
b = int(input("Enter the breadth of the cuboid: "))
h = int(input("Enter the height of the cuboid: "))
volume = l*b*h
print("Length =", l)
print("Breadth =", b)
print("Height = ", h)
print("The volume of cuboid = ", volume)
```

### **Output**

```
Enter the length of the cuboid: 5
Enter the breadth of the cuboid: 4
Enter the height of the cuboid: 7
Length = 5
Breadth = 4
Height = 7
The volume of cuboid = 140
```



defines a standard interface for Python database access modules.

(ii) ALTER TABLE Employee ADD salary Int(10);

23. [1, 2, 3]

OR

The smallest individual unit in a program is known as a Token or a lexical unit. Python has the following types of tokens:

1. Keywords : for, del, elif, else etc.
2. Identifiers : Variable names like balance, class names like Vehicle etc
3. Literals : String, Numeric, Boolean like 'abcd', None etc
4. Operators : Unary, Binary, Bitwise like '+', '&', '^' etc
5. Punctuators : Symbols like '#', '(', '[', '=' etc.

24. The file is opened in read mode and dump() function tries to write onto file, hence the error. So the line 3 should be changed to L:

with open ('data2.dat', 'wb') as f:

OR

```
def split_path (path):
 parent_path_name=os.path.split (path)
 if name == " "
 return (parent_path)
 else:
 return (split_path (parent_path)+name,)
```

25. The correct syntax of the code is:

```
def minus (total, decrement):
 output = total - decrement
 return output
```

The colon(:) was missing at the end of the function's header.

### Section C

26. Answer:

- (i) The above code will give syntax Error(Invalid token) because 0o8 is not a valid integer. Any number beginning with 0 is treated as octal number and octal numbers cannot have digits 8 and 9. Hence 0o8 is an invalid integer.
- (ii) The 'for loop' can be labelled as a determinable loop as the number of its iterations can be determined beforehand as the size of the sequence, it is operating upon. The 'while loop' can be labelled as a non-determinable loop, as its number of iterations cannot be determined beforehand. Its iterations depend upon the result of a test-condition, which cannot be determined beforehand.

```

num = " "
firstIteration = True
for i in range(n):
 randomDigit = " "
 if firstIteration:
 randomDigit = str(random.randint(1, 9))
 firstIteration = False
 else:
 randomDigit = str(random.randint(0, 9))
 num = randomDigit + num
return num
print(randomNDigitNumber(7))

```

28. i.

| COUNT (*) | GENDER |
|-----------|--------|
| 4         | FEMALE |
| 6         | MALE   |

ii. No rows selected

iii.

| DISTINCT AREA |
|---------------|
| NORTH         |
| SOUTH         |
| EAST          |
| WEST          |

OR

i. UPDATE ITEM SET Price = Price + 500

WHERE Item\_Code '106';

ii. SELECT Item\_Name FROM Item

WHERE (Quantity > 50) AND (Price < 500);

iii. SELECT Item\_Code FROM Item

WHERE Quantity < 70;

29. from pickle import load, dump

import os

import sys

def bfileCreate(fname):

l = []

sd={1000:['Sai',12,450]}

with open(fname,'wb') as ofile:

while True:

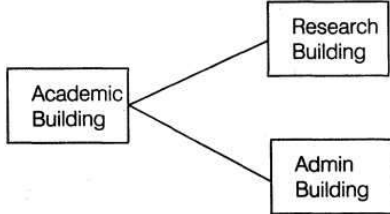
```

if ans.upper()=='N':break
x=int(raw_input("enter admission number of student"))
l = input("enter name class and marks of student enclosed in []")
sd[x] = l
ofile. close()
def bfileDisplay (fname):
if not os.path.isfile(fname) :
print "file does not exist"
else:
ifile = open(fname,'rb')
try:
while True:
sd=[]
sd=load(ifile)
print sd
except EOFError:
pass
ifile.close()
bfileCreate("Student.dat")
bfileDisplay("Student.dat")

```

30. i. **Correct** - obj1 is for positional parameter **object**; spacing gets its default value of 10 and **collapse** gets its default value of 1. The function call would become info(obj, 10, 1).
- ii. **Incorrect** - Required positional argument (object) missing; required arguments cannot be missed. This function call is incorrect.
- iii. **Correct** - Required parameter object gets its value as **obj2**; **spacing** gets value 12 and for skipped argument **collapse**, default value 1 is taken. The function call would become info(obj2, 12, 1), which is correct.
- iv. **Incorrect** - Same parameter object is given multiple values - one through positional argument and one through keyword(named) argument. The same parameter cannot have multiple values in a function call. Therefore, this function call is incorrect.
- v. **Correct** - Required parameter **object** gets its value as **obj3**; **collapse** gets value 0 and for skipped argument **spacing**, default value 10 is taken. The function call would be info(obj3, 10,0), which is correct.
- vi. **Incorrect** - Required parameter **object's** value cannot be skipped. Therefore, this function call is incorrect.
- vii. **Incorrect** - Positional arguments should be before keyword arguments. obj3 should be passed before spacing and collapse values.
- viii. **Correct** - Required argument **object** gets its value through a keyword argument.

3 . i.



D

- 1 ii. The most suitable place to house the server is Academic Building as it has maximum number of computers. Thus, it decreases the cabling cost and increase efficiency of network.
- iii. (c) Switch is to be installed in each of building to, connect all the computers.
- iv. Satellite connection.
- v. MAN

3 . a. Primary key of CABHUB table given in question = Vcode alternate key of CABHUB table = Vehicle Name. The Primary key of Customer table = Ccode Alternate Key of CUSTOMER = Cname.

- 2 b. i. SELECT VehicleName FROM CABHUB WHERE Colour = "WHITE";
- ii. SELECT VehicleName, capacity From CABHUB ORDER BY Capacity ASC;
- iii. SELECT MAX(Charges) FROM CABHUB;
- iv. SELECT Cname, VehicleName FROM CABHUB, CUSTOMER WHERE CUSTOMER.Vcode= CABHUB.Vcode;

c. i. 4

|     |              |              |
|-----|--------------|--------------|
| ii. | Max(Charges) | Min(Charges) |
|     | 35           | 12           |

- iii. 5
- iv. SX4  
C Class

OR

- i. SELECT GCODE, Description FROM GARMENT ORDER BY GCODE DESC ;
- ii. SELECT \* FROM GARMENT WHERE READY DATE BETWEEN '08-DEC-07' AND '16-JUN-08' ;
- iii. SELECT AVG(Price) FROM GARMENT WHERE FCODE = 'F03' ;
- iv. SELECT FCODE, MAX(Price), MIN(Price) FROM GARMENT GROUP BY FCODE ;

3 . Answer:

- (i) i. Set Transaction command establishes properties for the current transactions.

3

- ii. Select AVG (Age) from EMPLOYEE WHERE DepCde= 103 ;
  - iii. SELECT DepHead FROM DEPARTMENT WHERE EMPLOYEE.TName= "Sanjeev P" AND EMPLOYEE.DepCde = DEPARTMENT. DepCde ;
  - iv. SELECT \* FROM EMPLOYEE WHERE joinDate < '01-JAN-2007' ;
- b. i. COUNT(DISTINCT DEPCDE).

4

|      |                |                |
|------|----------------|----------------|
| ii.  | Max (JoinDate) | Min (JoinDate) |
|      | 03-Mar-2010    | 12-Jul-2004    |
| iii. | <b>TName</b>   | <b>DepHead</b> |
|      | Sameer Sharma  | Ajay Dutta     |
|      | Raguvindra K   | Rajiv Kumar    |
|      | Rama Gupta     | Yogesh Kumar   |
|      | C R Menon      | P K Singh      |
|      | Mohan kumar    | P K Singh      |
|      | Rajesh Kumar   | Yogesh Kumar   |
|      | Sanjeev P      | Rajiv Kumar    |
|      | Pragya Jain    | Ajay Dutta     |

iv. 5

(ii)

**OR**

- i. i. SQL is a very simple and easy to learn.
- ii. SQL allows the users to create, update, delete and retrieve data from a database.
- ii. i. SELECT Acode, ActivityName FROM ACTIVITY ORDER BY Acode DESC;
- ii. SELECT Stadium, SUM(PrizeMoney) FROM ACTIVITY GROUP BY Stadium;
- iii. SELECT Name, Acode FROM COACH ORDER By Acode;
- iv. SELECT \* FROM ACTIVITY WHERE SchduleDate < '01-Jan-2004' ORDER BY ParticipantsNum;

### 3 . push and pop operation into the stack:-

```
MAX_SIZE = 1000
```

E

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

```
4 top = 0
```

```
def push():
```

```
global stack, top
```

```
x = int(input ("Enter element to push into stack: "))
```

```
if top >= MAX_SIZE:
```

```
print("Cannot push. Stack is full. Overflow!")
```

```
else:
```

```
stack[top] = x
```

```
top += 1
```

```
def pop():
```

```
global stack, top
```

```
if top == 0:
```

```
print("Cannot pop. Stack is empty. Underflow!")
```

```
else:
```

```
top -= 1
```

```
def printStack():
```

```
print(stack[:top])
```

```
__main__
```

```
while True:
```

```
print("Please choose operation")
```

```
print("1. Push")
```

```
print("2. Pop")
```

```
print("3. Print")
```

```
print("4. Exit")
```

```
choice = int(input("Please enter 1/2/3 : "))
```

```
if choice == 4:
```

```
break
```

```
elif choice == 3:
```

```
printStack()
```

```
elif choice == 2:
```

```
pop()
```

```
elif choice == 1:
```

```
push()
```

else:

print("Please give a correct input")

- 3 . i. SELECT \* FROM FAMILY WHERE Occupation='Service';  
ii. SELECT Name FROM .FAMILY WHERE FemaleMembers > 3;  
iii. SELECT Name, Income FROM FAMILY ORDER BY Income;
- 5 iv. SELECT COUNT(\*) FROM FAMILY WHERE Income < 10000;  
v. SELECT \* FROM FAMILY WHERE INCOME > 10000 AND Occupation="Mixed";