Sample Question Paper - 3
Class: XII Session: 2023-24
Computer Science (083)

Time Allowed: 3 hours **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]**

   In a nested loop, a break statement terminates all the nested loops in one go.

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

   a) MIN b) MAX

   c) COUNT d) SUM

3. Which of the following is a procedural language? **[1]**

   a) Relational Algebra b) Query Language

   c) Tuple Relational Calculus d) Domain Relational Calculus

4. What possible output(s) are expected to be displayed on screen at the time of execution the program from the following code? Also specify the maximum values that can be assigned to each of the variables FROM and TO **[1]**

```
import random
AR = [20,30,40,50,60,70];
FROM = random.randint(1,3)
TO = random.randint(2,4)
for K in range(FROM,TO+1):
print (AR[K],end = "#")
```

   a) 10#40#70# b) 50#60#70#

c) 40#50#70#

d) 30#40#50#

5. Find ODD parity bit for 10010001 **[1]**

a) 2

b) 0

c) none of these

d) 1

6. Assume that the position of the file pointer is at the beginning of 3rd line in a text file. Which of the following option can be used to read all the remaining lines? **[1]**

a) myfile.read(n-3)

b) myfile.readlines()

c) myfile.read(n)

d) myfile.readline()

7. 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

8. The operation whose result contains all pairs of tuples from the two relations, regardless of whether their attribute values match. **[1]**

a) Intersection

b) Set difference

c) Join

d) Cartesian product

9. Text file is a file that stores information in **[1]**

a) BCD characters

b) ASCII characters

c) UNICODE.characters

d) ISCII characters

10. Which value type does input( ) return? **[1]**

a) Float

b) Boolean

c) Int

d) String

11. For the list [34, 8, 14, 51, 32, 21], how will the list elements look like after second pass in Insertion sort: **[1]**

a) [8, 14, 32, 21, 34, 51]

b) [8, 21, 32, 34, 51, 14[

c) [8, 14, 34, 51, 32, 21] d) [8, 32, 34, 51, 14, 21[

12. What is the output of the following Python code? **[1]**

```
def ListChange():
   for i in range(len(L)):
      if L[i] % 2 == 0:
         L[i] = L[i] * 2
      if L[i] % 3 == 0:
         L[i] = L[i] * 3
      else:
         L[i] = L[i] * 5
L = [2, 6, 9, 10]
ListChange()
for i in L:
   print(i, end="#")
```

a) 6#18#27#50# b) Error

c) 20#36#27#100# d) 4#12#27#20#

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

Every object on the Internet has a unique URL.

14. Given an object obj1 = (10, 20, 30, 40, 50, 60, 70, 80, 90). What will be the output of print(obj1 [3:7:2])? **[1]**

a) (40, 50, 60, 70, 80) b) (40, 60)

c) (40, 50, 60, 70) d) (40, 50, 60)

15. Fill in the blanks: **[1]**

When two conditions must both be true for the rows to be selected, the conditions are separated by the SQL keyword _____.

16. Protective covering that protects the optical fiber from outside environment is known as **[1]**

a) Core b) Jacket

c) Buffer d) Cladding

17. **Assertion (A):** Python does not allow programmers to develop the software for several computing platforms by writing a program only once. **[1]**
Reason (R): Python is cross platform language.

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 readline() method reads the lines of the file from the beginning. **[1]**
Reason (R): The read() method reads a number from 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.

Section B

19. **Answer:** **[2]**

(i) i. What is the amplitude modulation? **[1]**

ii. Which secure communication is used by organization to work for the people and organization? **[1]**

(ii) **OR**

i. What are the basic methods of checking errors in the data being transmitted over networks? **[2]**

20. Following table represents information on sales representatives For Premiere Products and contains the **[2]**
Following data Fields for sales representations.

Sales representative's number	SLSRNUMB
Sales representative's name	SLSRNAME
Sales representative's address	SLSRADDR
total commission paid to the sales representative	TOTCOMM
Sales representative's commission rate	COMMRATE

Write Python code to create the above table.

21. Construct logical expressions to represent the following conditions. **[2]**

i. Weight is greater than or equal to 115 but less than 125.

ii. Donation is in the range of 4000-5000 or Guest is 1.

OR

What is the difference between a keyword and an identifier?

22. **Answer:** **[2]**

(i) What is database connectivity? **[1]**

(ii) What will the following query do? **[1]**

```
import mysql.connector
db = mysql.connector.connect(.. )
cursor = db.cursor( )
db.execute("SELECT * FROM staff WHERE person_id in {}".format((1,3,4)))
db.commit( )
db.close( )
```

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

OR

Determine the hierarchy of operations and evaluate the following expresssion.

a = 2*3 // 4 + 4 // 4 + 8 - 2 + 5 // 8

24. Read the code given below and answer the question: **[2]**

```
fh = open ("main, txt", "w")
fh.write("Bye")
fh.close()
```

If the file contains "GOOD" before execution, what will be the contents of the file after execution of this code?

OR

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

Example: If the file content is as follows:

Updated information

As simplified by official websites.

The EUCount() function should display the output as:

A or a : 4

M or m : 2

25. Find the errors in following function definition **[2]**

i.
```
def main()
print ("hello")
```

ii. def func2():
print(2 + 3)

iii. def compute():
print(x* x)

iv. square(a)
return a * a

Section C

26. **Answer:** **[3]**

(i) Answer the following. **[1.5]**

i. What is the worst case time complexity for insertion sort?

ii. What is the space complexity for insertion sort?

(ii) In the below given code fragments, indicate the data type of each bold part by choosing the correct type of data from the following type. **[1.5]**

a. int

b. float

c. bool

d. str

e. function

f. list of int

g. list of str

i. L = inputline.split( )
while L != ( ) :
print(L)
L = L[1 :]

ii. L = ['Hiya', 'Zoya', 'Preet']
print(L[0] + L[1])

27. Write a function called removeFirst that accepts a list as a parameter. It should remove the value at index 0 from the list. **[3]**
Note that it should not return anything (returns None). Note that this function must actually modify the list passed in, and not just create a second list when the first item is removed. You may assume the list you are given will have at least one element.

28. You want to group the result set based on some column's value. Also, you want that the grouped result should appear in a sorted order. In which order will you write the two clauses (for sorting and for grouping). Give example to support your answer. **[3]**

OR

Mr. Mittal is using a table with following columns :
Name, Class, Streamed, Stream_name
He needs to display names of students who have not been assigned any stream or have been
assigned stream_name that ends with "computers
He wrote the following command, which did not give the desired result.
SELECT Name, Class FROM Students
WHERE Stream_name = NULL OR Stream_name = "%computers" ;
Help Mr. Mittal to run the query by removing the error and write correct query.

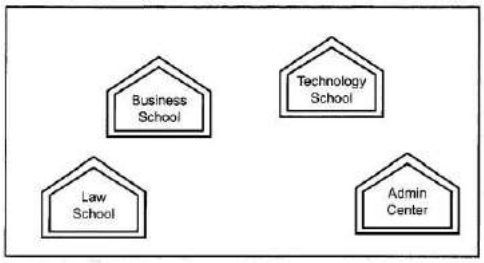
29. What is the output of the following code program. Explain? **[3]**

```
>>> out = file ("output.txt",'w')
>>> out.write ("Hello, world!\n")
>>> out.write ("How are you ?")
>>> out.close ()
>>> file("output.txt").read()
```

30. What is the significance of having functions in a program? **[3]**

Section D

31. Great Studies University is setting up its Academic schools at Sunder Nagar and planning to set up a network. The university has 3 academic schools and one administration centre as shown in the diagram below: **[5]**



Center to center distances between various buildings is as follows:

Law School to Business School	60 m
Law School to Technology School	90 m
Law School to Admin Center	115 m
Business School to Technology School	40 m
Business School to Admin Center	45 m
Technology School to Admin Center	25 m

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

Law School	25
Technology School	50
Admin Center	125
Business School	35

i. Suggest the most suitable place (i.e., Schools/Center) to install the server of this university with a suitable reason.

ii. Suggest the most efficient connecting medium for connecting these Schools/center for wired connectivity.

iii. Which device you will suggest to be placed/installed in each of these Schools! center to efficiently connect all the computers within these Schools/center?

iv. The university is planning to connect its admission office in the closest big city, which is more than 350 km from the university. Which type of network out of LAN, MAN or WAN will be formed? Justify your answer.

32. 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. **[5]**

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

i. To display NO, NAME, TDATE from the table TRIP in descending order of NO.

ii. To display the NAME of the drivers from the table TRIP, who are travelling by transport vehicle with code 101 or 103.

iii. To display the NO and NAME of those drivers from the table TRIP who travelled between 2015-02-10 and 2015-04-01.

iv. To display all the details from table TRIP in which the distance travelled is more than 100 KM in ascending order of NOP

v. SELECT COUNT (*), TCODE From TRIP
GROUP BY TCODE HAVING COUNT (*) > 1;

vi. SELECT DISTINCT TCODE from TRIP;

vii. SELECT A.TCODE, NAME, TTYPE
FROM TRIP A, TRANSPORT B
WHERE A.TCODE = B. TCODE AND KM < 90;

viii. SELECT NAME, KM * PERKM
FROM TRIP A, TRANSPORT B
WHERE A. TCODE = B. TCODE AND A. TCODE = '105';

OR

Study the following tables FLIGHTS and FARES and write SQL commands for the questions (i) to (iv).

TABLE: FLIGHTS

FL_NO	STARTING	ENDING	NO_FLIGHT	NO_STOPS
IC301	MUMBAI	DELHI	8	0
IC799	BENGALURU	DELHI	2	1
MC101	INDORE	MUMBAI	3	0
IC302	DELHI	MUMBAI	8	0
AM812	KANPUR	BENGALURU	3	1
IC899	MUMBAI	KOCHI	1	4
AM501	DELHI	TRIVANDRUM	1	5
MU499	MUMBAI	MADRAS	3	3
IC701	DELHI	AHMEDABAD	4	0

TABLE: FARES

FL_NO	AIRLINES	FARE	TAX%
IC701	INDIAN AIRLINES	6500	10
MU499	SAHARA	9400	5
AM501	JET AIRWAYS	13450	8
IC899	INDIAN AIRLINES	8300	4
IC302	INDIAN AIRLINES	4300	10
IC799	INDIAN AIRLINES	10500	10
MC101	DECCAN AIRLINES	3500	4

i. Display FL_NO and NO_FLIGHT from KANPUR to BENGALURU from the table FLIGHTS.

ii. Arrange the contents of the table FLIGHTS in the ascending order of FL_NO.

iii. Display the FL_NO and fare to be paid for the flights from DELHI to MUMBAI using the tables FLIGHTS and FARES, where the fare to be paid = FARE + FARE * TAX % 100.

iv. Display the minimum fare INDIAN AIRLINES is offering from the table FARES.

v. To display the detail fares of Indian airlines.

33. **Answer:** **[5]**

(i) i. Write a query to display the Sum, Average, Highest and Lowest salary of the employees grouped by department number and sub-grouped by the job. **[1]**

ii. Give output for following SQL queries as per given table(s) : **[4]**

Table: SENDER

SenderID	SenderName	senderAddress	SenderCity
ND01	| R Jain	2, ABC Appts	New Delhi
MU02	H Sinha	12, Newtown	Mumbai
MU15	S Jha	27/A, Park Street	Mumbai
ND50	T Prasad	122-K, SDA	New Delhi

Table : RECIPIENT

RecID	SenderID	RecName	RecAddress	RecCity
KO05	ND01	R Bajpayee	5, Central Avenue	Kolkata
ND08	MU02	S Mahajan	116, A Vihar	New Delhi
MU19	ND01	H Singh	2A, Andheri East	Mumbai
MU32	MU15	P K Swamy	B5, C S Terminus	Mumbai
ND48	ND50	S Tripathi	13, B1 D, Mayur Vihar	New Delhi

i. SELECT DISTINCT SenderCity FROM Sender;

ii. SELECT A.SenderName, B.RecName
FROM Sender A, Recipient B
WHERE A.SenderID = B.SenderID AND B.RecCity = 'Mumbai';

iii. SELECT RecName, RecAddress
FROM Recipient
WHERE RecCity NOT IN ('Mumbai', 'Kolkata');

iv. SELECT RecID, RecName
FROM Recipient

WHERE SenderID = 'MU02' OR SenderID - 'ND50'

(ii) **OR**

i. Expand the following abbreviation: **[1]**

i. SQL

ii. DML

ii. Consider the following tables SCHOOL and ADMIN and answer this question: **[4]**

Table: SCHOOL

CODE	TEACHER NAME	SUBJECT	DOJ	PERIODS	EXPERIENCE
1001	Ravi Shankar	English	12/3/2000	24	10
1009	Priya Rai	Physics	03/09/1998	26	12
1203	Lisa Anand	English	09/04/2000	27	5
1045	Yashraj	Maths	24/08/2000	24	15
1123	Ganan	Physics	16/07/1999	28	3
1167	Harish B	Chemistry	19/10/1999	27	5
1215	Umesh	Physics	11/05/1998	22	16

Table: Admin

Code	Gender	Designation
1001	Male	Vice Principal
1009	Female	Co-ordinator
1203	Female	Co-ordinator
1045	Male	HOD
1123	Male	Senior Teacher
1167	Male	Senior Teacher
1215	Male	HOD

Write SQL statements for the following:

i. To display TEACHERNAME, PERIODS of all teachers whose periods are more than 25.

ii. To display all the information from the table SCHOOL in descending order of experience.

iii. To display DESIGNATION without duplicate entries from the table ADMIN.

iv. To display TEACHERNAME, CODE and corresponding DESIGNATION from tables SCHOOL and ADMIN of Male teachers.

Section E

34. Write a program to implement a stack for these book details (bookno, bookname). That is, now each item node of the stack contains two types of information -a bookno and its name. Just implement push and display operations. **[4]**

35. Write SQL commands for (i) to (v) on the basis of the table SPORTS **[4]**

TABLE: SPORTS

STUDENTNO	CLASS	NAME	GAME1	GRADE	GAME2	GRADE1
10	7	Sameer	Cricket	B	Swimming	A
11	8	Sujit	Tennis	A	Skating	C
12	7	Kamal	Swimming	B	Football	B
13	7	Veena	Tennis	C	Tennis	A
14	9	Archana	Basketball	A	Cricket	A
15	10	Arpit	Cricket	A	Athletics	C

i. Display the games taken up by the students, whose name starts with 'A'.

ii. Write a query to add a new column named MARKS.

iii. Write a query to assign a value 200 for Marks for all those, who are getting grade ‘B’ or grade 'A' in both GAME1 and GAME2.

iv. Which command will be used to arrange the whole table in the alphabetical order of NAME?

a. SELECT FROM SPORTS ORDER BY NAME;

b. SELECT * SPORTS ORDER BY NAME;

c. SELECT * FROM SPORTS ORDER NAME;

d. SELECT * FROM SPORTS ORDER BY NAME;

v. Identify the attribute best suitable to be declared as a primary key.

Answers

Section A

1. **(b)** False
   Explanation: False
2. **(c)** COUNT
   Explanation: COUNT
3. **(a)** Relational Algebra
   Explanation: All others are non procedural language.
4. **(d)** 30#40#50#
   Explanation: 30#40#50#
   Maximum value for FROM is 2.x but < 3 and maximum value for TO is 4.
5. **(b)** 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
   Even parity - data: 10010001, parity bit 1
   Odd parity - data: 10010001, parity bit 0
6. **(b)** myfile.readlines()
   Explanation: myfile.readlines()
7. **(d)** All of these
   Explanation: It provides all the mentoined features.
8. **(d)** Cartesian product
   Explanation: Cartesian product is the multiplication of all the values in the attributes.
9. **(b)** ASCII characters
   Explanation: ASCII characters
10. **(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().

11. **(c)** [8, 14, 34, 51, 32, 21]
Explanation: [8, 14, 34, 51, 32, 21]
12. **(c)** 20#36#27#100#
Explanation: 20#36#27#100#
13. **(a)** True
Explanation: True
14. **(b)** (40, 60)
Explanation: (40, 60)
15. 1. AND
16. **(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.
17. **(d)** A is false but R is true.
Explanation: We can say that Python is a cross platform language as Python can run on different platforms such as Windows, Linux, UNIX, and Macintosh, etc. It enables programmers to develop the software for several computing platforms by writing a program only once.
18. **(c)** A is true but R is false.
Explanation: The read() method reads bytes from the file. It can read the data in the text as well as a binary format. The readline() method reads the lines of the file from the beginning, i.e., if we use the readline() method two times, then we can get the first two lines of the file.

Section B

19. Answer:
(i) i. When a high-frequency carrier wave's amplitude is varied in accordance with the amplitude of the information (wave) to be transmitted, keeping the frequency and phase of the carrier wave unchanged, this process is called Amplitude Modulation.
ii. Digital Certificate

(ii) **OR**

i. There are many methods of checking or detecting errors in the data transmitted. The four simplest ones are:

i. Single dimensional parity checking
ii. Two-dimensional parity checking
iii. Checksum
iv. Cyclic Redundancy Check (CRC)

20. import MySQLdb
db = MySQLdb.connect ("localhost", "Admin", "Ad123", "SALES")
cursor= db.cursor()
cursor.execute("DROP TABLE IF EXISTS sales_Representative")
try:
sql= """CREATE TABLE SALES_Representative (slsrnumb integer, slsrname char(25) not null, slsraddr char(100)
not null, totcomm double, commrate double)"""
cursor.execute (sql)
except:
db.close()

21. i. (weight > =115 and weight < 125)
ii. ((Donation > = 4000 and Donation < = 5000) or Guest = =1)

OR

Keyword is a special word that has a special meaning and a specific operation. They are reserved words that convey a special meaning to the compiler/interpreter. . For example, if, elif, else, etc. are keywords.
Identifier is the user-defined name given to a part of a program viz. variable, object, function etc. Identifiers are not reserved. These are defined by the user but they can have letters, digits and a symbol underscore. They must begin with either a letter or underscore. For instance, _chk, chess, trial etc., are identifiers in Python.

22. Answer:
(i) A Database connection is a facility that allows client software to talk to database server software, whether on the same machine or not.
(ii) It will extract rows from staff table where person_id is 1 or 3 or 4.

23. 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

a = 2 * 3//4 + 4 //4 + 8 -2 + 5//8
= 6//4 + 4//4 + 8 - 2 + 5//8 operation : *
= 1 + 4//4 + 8 - 2 + 5//8 operation : //
= 1 + 1 + 8 - 2 + 5//8 operation : //
= 1 + 1 + 8 - 2 + 0 operation : //
= 2 + 8 - 2 + 0 operation : +
a = 10 - 2 + 0 operation : +
a = 8 + 0 operation : -
a = 8 operation : +

24. The content in the file will be "Bye" string only because when an existing file is opened in write mode ("w"), the existing data in the file is truncated. So, "GOOD" string is truncated when the file is opened in write mode.

OR

```
def count_A_M():
    f = open("story.txt", "r")
    A,M = 0,0
    r = f.read()
    for x in r
        if x[0] == "A" or x[0] == "a" :
            A = A + 1
        elif x[0] == "M" or x[0] == "m":
            M = M + 1
    f.close()
    print("A or a:",A)
    print("M or m:", M)
```

25. i. Colon (:) missing in the function header. The function definition header should end with colon.
ii. If the indentation is of four spaces, then no error, else indentation error.
iii. If the indentation is of four spaces, then no error, else indentation error.
iv. Keyword def missing and no colon (:) at the end of the function header. The header starts with def keyword and end with a colon.

Section C

26. Answer:
(i) i. $O(n^2)$
ii. O(1)
(ii) i. List
ii. String

27. def removeFirst (input_list):
    """This function will remove first item of the list"""
    input_list.pop(0)
    #pop removes and returns item of list
    return
28. When we use GROUP BY clause (for grouping of data) and ORDER BY clause (for sorting data) together, the ORDER BY clause always follows other clauses. That is, the GROUP BY clause will come before the ORDER BY clause. For example In this query,
    SELECT user_id, SUM(score) AS total_score FROM user_score GROUP BY user_id ORDER BY user_id ASC;

    OR

    The given query is erroneous because it involves pattern matching.
    The correct operator to be used for pattern matching is **LIKE**. Also, there is NULL comparison and for it also incorrect operator is used. The correct operator for NULL comparison is IS. Thus, the correct SQL statement will be :
    SELECT Name, class FROM students WHERE Stream-name IS NULL OR Stream-name LIKE "%computers" ;
29. Hello, world!
    How are you?
    the first line will open the file in write mode. The next two lines will write the text to the file. The fourth line will close the file. In the fifth line, the file() function gives the reference of the file output.txt to read () function which reads the text from the file.
30. Creating functions in programs is very useful. It offers the following advantages:
    i. The program is easier to understand. The main block of the program becomes compact as the code of functions is not part of it, this is easier to read and understand.
    ii. Redundant code is in one place, so making changes is easier. Instead of writing code again when we need to use it more than once, we can write the code in the form of a function and call it more than once. If we later need to change the code, we change it in one place only. Thus it saves our time also.
    iii. Reusable functions can be put in a library in modules. We can store the reusable functions in the form of modules. These modules can be imported and used when needed in other programs.
    iv. You use functions in programming to bundle a set of instructions that you want to use repeatedly because of their complexity, are better self-contained in a sub-program and called when needed. That means that a function is a piece of code written to carry out a specified task.

Section D

31. i. The most suitable place to install the server is Admin Centre because it has maximum number of computers. (using 80-20 rule).
    ii. Fibre optic cable
    iii. Switch
    iv. WAN because LAN and MAN cannot span more than 100 km.
32. 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

OR

    i. SELECT FL_NO, NO_FLIGHT FROM FLIGHTS WHERE STARTING = 'KANPUR' AND ENDING = 'BENGALURU';
    ii. SELECT * FROM FLIGHTS ORDER BY FL_NO;
    iii. SELECT FL_NO, FARE + FARE * TAX%100 FROM FARES WHERE FL_NO = (SELECT FL_NO FROM FLIGHTS WHERE STARTING='DELHI' AND ENDING='MUMBAI');
    iv. SELECT MIN(FARE) FROM FARES GROUP BY AIRLINES HAVING AIRLINES='INDIAN AIRLINES';
    v. SELECT * FROM FARES WHERE AIRLINES="Indian Airlines";
33. Answer:
    (i) i. mysql > SELECT SUM (sal), AVG (sal), MAX (sal), MIN (sal) FROM empl GROUP BY deptno, job_id;

ii. i. Sendercity
New Delhi
Mumbai

ii.

SenderName	RecName
R Jain	H Singh
S Jha	P K Swamy

iii.

RecName	RecAddress
S Mahajan	116, AVihar
S Tripathi	13, BID, MayurVihar

iv.

RecID	RecName
ND08	S Mahajan
ND48	S Tripathi

(ii) **OR**

i. i. SQL - Structured Query Language
ii. DML - Data Manipulation Language

ii. i. SELECT TEACHER NAME, PERIODS FROM SCHOOL WHERE PERIODS >25;
ii. SELECT * FROM SCHOOL ORDER BY EXPERIENCE DESC;
iii. SELECT DISTINCT DESIGNATION FROM ADMIN;
iv. SELECT TEACHER NAME, CODE, DESIGNATION FROM SCHOOL, ADMIN WHERE SCHOOL.CODE = ADMIN.CODE AND GENDER = "MALE";

Section E

34. Implementation of stack for push and display operation:-

```
def isEmpty(stk):
if stk==[ ]:
return True
else:
return False
def pushbook(stk, item):
stk. append (item)
top=len(stk)-1
def displaybook(stk):
if isEmpty(stk):
print “Stack Empty”
else:
top = len(stk)-1
print “Book No----- Book Name”
```

```
for a in range (top, -1,-1)
print stk[a].split( )
#main
stack = [ ]
top = None
while True:
print “Books”
print “1. Add a book”
print “2. Display list”
print “3. Exit”
ch=int (row_input(“Enter your choice 1-3:”))
if ch == 1:
bno = row_input(“Enter Book No.”)
bname = row_input(“Enter Book Name”)
item = [bno, bname]
pushbook(item, stk)
row_input()
elif ch == 2:
displaybook(stk)
row_input()
elif ch==3:
break
else:
print “Invalid choice!”
row_input( )
```

35. i. SELECT GAME1, GAME2 FROM SPORTS WHERE NAME LIKE 'A%';
ii. ALTER TABLE SPORTS ADD(MARKS NUMBERC(3));
iii. UPDATE SPORTS SET MARKS = 200 WHERE GRADE='A' OR GRADE='B' OR GRADE1='A' OR GRADE1='B';
iv. (d) SELECT * FROM SPORTS ORDER BY NAME;
v. STUDENTNO attribute is best suitable to be declared as a primary key.