

Group A

2. Different between any four of the following:

I) Database administrator and database

II) Super key and primary manager.

III) Sub queries and nested queries key.

IV) DBMS and RDBMS

V) DML and DCL

3. Consider the following relational schema;

Students (s_id, name, phone, program) Subjects

(subject_id, subject_name, taught_by)

Mark's (s_id, subject_id, marks)

Make assumptions if any.

Formulate SQL queries for any of the following:

A) Find the name of students who have passed more than 5 subjects.

(For passing a subject, students must get at least 50 marks.)

B) Find the program of the student who has not passed a single course.

C) Find the subject that has been passed by all the students who have appeared for the subject.

D) Find the list of teachers who have taught more courses than what has been taught by teacher 'XYZ'.

E) Find the S_id of those students who share the same phone numbers.

(Assume that a maximum of two students can have the same phone number.)

4. A) write the output of any six of the following:

I) Select MOD (35,6) from dual

II) Select LENGTH ('Upendra Narayan ') from dual

III) Select TRUNC (15, 72, and 1) from dual

IV) Select ROUND (15, 194, 1) from dual

V) Select POWER (6, 4) from dual

VI) Select INITCAP ('good day ') from dual

VII) Select SORT (625) from dual

B) Explain buffer management and shadow paging with an example.

5. A) Table 1: DEPT

DEPTNO (NOT NULL, NUMBER (21), DNAMNVAR CHAR 2(14), LOC (VARCHAR2 (13))

Table 2: EMP

EMPNO (NOT NULL, NUMBER (4;),ENAMEVARCHAR 2(10)),JORDAN CHAR 2(9)), MGR (NUMBER (4)), HIRDATE(DATE), SAL(NUMBER(7,2)),COMN (NUMBER (7,2)), DEPTNO (NUMBER (2))

MGR - empno of the employees who's the employee reports to DEPT – foreign key Write SQL statement for any four the following:

I) List all the employee who have at least one person reporting to them.

II) List the employee details if and only a more than 10 employees are present in dept no 10.

III) List the name of the employee with their immediate higher authority.

IV) List the an employee who do not manage any one

V) List the employee's details whose salary is better than the lowest salary if an employee belongs to dept no 20.

B) Explain any two of the following:

1) Aggregate function

II) Generalization

III) Normalization

6. A) consider the following requirements of a staff management system of an organization:

*The basic information that needs to be sorted about the staff includes staff_id name. Address, date of birth, date of employment, post held,

*It keeps dependent information of employees an employee can have many dependents

*pay details of the employee are also kept.

*It also keeps the track of the various departments and employees of those departments. Draw the E-R diagram for the organization. Make suitable assumptions, if any.

B) Write at least an advantage of the database approach.

Group B

7. A) write an algorithm that translate an infix into postfix notation.

B) Write a program to arrange the numbers using insertion sort technique.

8. Write short notes on any three of the following:

9. A) Write a program to search an item entered by user from a binary search tree.

B) Construct a binary tree of the prefix expression

- +435/+2436

10. A) what is column - major order? Explain also give the general formula for accessing an element in a two-dimensional array stored in column - major order

B) The order of nodes of a Binary tree in pre-order and in - order traversal is as follows: Pre-order:
ABCDFHJMKEGILN

In - Order: ADJMHKECINLGE B

Draw the corresponding Binary tree.

11. A) The following key are to be inserted in the order show into an AVL tree:

23, 75,64,86,43,58,15,26

B) Write a program segment to insert value N after the nodes in the link list.