**solution of 2**

**Exam 2:**

**Q1) what is goal of query processing?**

The aims or goal of query processing is to transform a query written in high level language t, typically SQL, in to correct and efficient execution strategy expressed in a low level (implementing relational algebra) and, to execute the strategy to retreive the data

Q2) **Durability** ensures that once transaction changes are done, they can not lost or undone  even in the case of syste failur.

**Q3) Whats are transaction?**

**Q3b) why are they important in DBMS? What problems do they solve?**

Ans3: same as above and for problems we can write inconsistancy, recovery control using rollback etc

**Q5) Write a query that will delete all shippers which did not ship any orders greater than $100 in the last 30days.**

Ans:)

**Q6)(1)        When transaction Ti requests a data item currently held by Tj , Ti is allowed to wait only if it has a timestamp smaller than that of Tj (that is, Ti is older than Tj ). Otherwise, Ti is rolled back (dies). This is**

A.      Wait-die

B.      Wait-wound

C.      Wound-wait

D.     Wait

ANS: A. Wait-die

**Q7) Transaction ACID properties.Describe each of them.**

Ans7): ACID properties are:

Atomicity, Consistency, Isolation and Durability

**Atomicity**

When performing a transaction either it should be completely perform and terminated or abort the process. As an example in a transaction of borrowing money from a ATM machine during the process if any failure occurs due to a system problem either system should completely abort the process and restart or should be discontinued the operation.

**Consistency**

When go through a process before shift to the one state form to another in the operation the previous state should ensure the particular operations for that state were successfully completed in that state. Otherwise the operation will not be continued. In ATM operation the operation of borrowing money will not be completed until the all records were added to the database.

**Isolation**

When multiple transactions occur simultaneously. Occurring of one transaction will not be interfering the other transaction. That is a property of a DBMS. So that it will never conflict two transactions which occurs simultaneously.As an example if two transaction are performs on a database at the same time one transaction will not be blocked by the other transaction.

**Durability or Permanency**

In the DBMS operations for the purpose of archiving the efficiency the records are holds in the memory buffer not in the main memory. So the after committed a transaction it should be permanently record the all records related to operations and because of any failure that records should not be loss.As an example in an ATM machine after completed the transaction it will come to the commit state and all records happened in the operations will be permanent stored in the disk of the DBMS.

**Q8)**

**a)Explain the concept of normalization:**It is a technique for producing a set of relations with desirable properties,given the data requirements of an enterpris. It is a formal method that can be used to identify relations based on their keys and the functional dependencies among their attributes.

**b) what does 1nf do:** It identifies and removes repeating groups with in the table. So the resultant 1NF relation is a relation in which the intersection of each row and column contains 1 and only 1 value.

**c) what does 2nf do: I**t removes the partial dependencies. If partial dependency exists, we remove the partially dependent attributes from the relation by placing them in a new relation along with the copy of their determinant.

The resultant relation of 2Nf is a relation which is in 1NF and every non-primary key attribute of that relation is fully functionally dependent on the primary key.

**d) what does 3nf do:**It involves removal of transitive dependencies. If transitive dependency exists, we remove the transitively dependent attributes from the relation by placing them in a new relation along with the copy of their determinant.

The resultant relation of 3Nf is a relation which is in 2NF and in which no  non-primary key attribute of that relation is transitively dependent on the primary key.

q) Delete all shippers which did not ship any order greater than$100 in the last 30 days.

SELECT \* FROM `exam2`.`shipper` s WHERE s.`shipper\_id`  IN (

            SELECT o.`shipper\_id` FROM `exam2`.`order` o , `exam2`.`order\_details` od ,

                        `exam2`.`product` p

                        WHERE

             o.`order\_id`=od.`order\_id` AND p.`product\_id` = od.`product\_id`

            AND (o.`date\_shipped` >= DATE\_SUB(CURDATE(),INTERVAL 30 DAY))

            GROUP BY o.`shipper\_id` HAVING

             SUM(od.`quantity` \* p.`price` )<=100

)