Reg. No. : | | | | | | | | | | |

Question Paper Code: 31385

B.E. / B.Tech. DEGREE EXAMINATION, NOVEMBER 2015

Third Semester

Information Technology

01UIT305 - DATABASE SYSTEMS

(Regulation 2013)

Duration: Three hours Maximum: 100 Marks

Answer ALL Questions

PART A - (10 x 2 = 20 Marks)

1. Give example for one to one and one to many relationships.
2. Differentiate physical and logical data independence.
3. Classify the various data types in SQL.
4. Define a trigger.
5. Show that, if a relational database is in BCNF, then it is also in 3NF.
6. Express the need for normalization.
7. Describe the use of save points.
8. List ACID properties.
9. Discuss the need for RAID.
10. Differentiate static hashing and dynamic hashing.

PART - B (5 x 16 = 80 Marks)

11. (a) (i) Discuss in detail about the major disadvantages of file processing system. (8)

(ii) Explain in detail about different data models with neat diagram. (8)

Or

(b) Demonstrate an E-R diagram for railway reservation system. (16)

12. (a) Consider the following schema

Items_ordered (customerid, order_date, item, quantity, price)

Develop SQL for the following:

1) Create the table Items_ordered and display the description of the table.
2) Insert your own values into the table.
3) Select the list of items purchased, quantity,price for the customer_id = '10499'.
4) Select all columns from the Items_ordered table for whoever purchased the item= 'pen'.
5) Select the customerid, order_date, and item values from the items_ordered table for any items in the item column that start with the letter "S".
6) Select the distinct items in the items_ordered table. In other words, display a listing of each of the unique items from the items_ordered table.
7) Select the maximum price of any item ordered in the items_ordered table.
8) Select the average price of all of the items ordered that were purchased in the month of Dec. (16)

Or

(b) Demonstrate the various operations in relational algebra with examples. (16)

13. (a) Describe Boyce Codd normal form and fourth normal form with suitable example. (16)

Or

(b) Describe the first, second and third normal forms with suitable examples. (16)

14. (a) (i) Define and differentiate between Deadlock prevention, Deadlock detection, Deadlock avoidance. (8)

(ii) Explain about intent locking. (8)

Or

(b) (i) Summarize the states of a transaction. (8)

(ii) Describe the two phase locking protocol with examples. (8)

15. (a) (i) What is RAID? Briefly explain different levels of RAID. (8)

(ii) Discuss the factors to be considered in choosing a RAID level. (8)

Or

(b) (i) Explain magnetic disk and tertiary storage. (8)

(ii) Discuss the structure of B^+ tree. (8)