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UH-8071-A

B. E. - II (Sem. - III) (CO) Examination

May/June – 2012

Database Management System

(New Course)

Time : **3** Hours] [Total Marks : **100**

Instruction :

નીચે દર્શાવેલ ☛ નિશાનીવાળી વિગતો ઉત્તરવહી પર અવશ્ય લખવી.
Fillup strictly the details of ☛ signs on your answer book.

Name of the Examination :

☛ **B. E. - II (Sem. - III) (CO)**

Name of the Subject :

☛ **Database Management System (New)**

☛Subject Code No. : **8 0 7 1** ☛Section No. (1, 2,.....) : **Nil**

Seat No. :

Student's Signature

Q.1 [A] Define the following terms: (Any Five) [10]

1 Foreign Key
2 Functional Dependency
3 Instance and Schema
4 Super Key
5 Relational Algebra
6 Mapping Cardinalities
7 Database Administrator

[B] List significant differences between a file processing system and a DBMS. [07]

OR

[B] What do you mean by data abstraction? Explain 3-levels of data abstraction in detail. [07]

Q.2 [A] Attempt Any Three: [18]

1 Consider a relation R with five attribute A,B,C,D,E having following dependencies
A →B, BC→E and ED→A
a)List all Keys for R
b) In which normal form table is, justify your answer.

2 Given relation R with attributes A,B, C,D,E,F and set of FDs as A-> BC, E-> CF, B->E and CD-> EF. Find out closure {A, B} + of the set of attributes.

3 Explain 1NF and 2NF.

4 Explain DDL,DML,DCL.

Q.3 [A] Give Symbol used in E-R Diagram and Draw the E-R diagram for Online Shopping management System. [07]

OR

Give Symbol used in E-R Diagram and Draw the E-R diagram for School management System. [07]

[B] Attempt any two: [08]

1. Explain selection and projection operation with example.
2. Explain Generalization and Specialization in E-R Diagram with example.
3. Explain natural join operation with example.

Q4a. Describe the following: (Any 10) [10]

i. Foreign key
ii. Trigger
iii. COMMIT
iv. Data dictionary
v. Timestamp
vi. Atomicity
vii. Two types of data encryption standard
viii. View
ix. Difference between security and integrity
x. Deadlock
xi. Wait-Die
xii. Unique constraint

b) Explain State diagram for transaction. [06]

c) Explain with diagram query decomposition. [04]

Q5a) Consider the following relation scheme: [08]

Books (Book_id, B_name, Author, Purchase_date, cost)
Members (Member_id, M_name, Address, Phone, Birth_date)
Issue_return (Book_id, Member_id, Issue_date, Return_date)
Write query to-

a) Find the names of all the books not been issued.
b) Display the member_id and the number of books issued to that member.
c) Find the books that have been issued maximum number of times.

Display the names and authors of books that have been issued at any time to a member whose Member_id is abc.

b) What is query optimization? Explain it with a detailed block diagram. [07]

OR

b) Write short note on advantages of PL/SQL. [07]

Q6a) What is data encryption? How it is used in database security? [04]

b) Explain Two-Phase commit protocol. [04]

c) Write PL/SQL code for a function which takes an integer from user and displays its square and cube. [07]

OR

c) Explain Conflict Serializability with example. [07]
