



**DHARMSINH DESAI UNIVERSITY, NADIAD**  
**FACULTY OF TECHNOLOGY**  
**B.TECH. SEMESTER V [INFORMATION TECHNOLOGY]**  
**SUBJECT: (IT 502) DATABASE MANAGEMENT SYSTEM**

**Examination** : First Sessional  
**Date** : 09/08/2012  
**Time** : 10.45 to 12.00

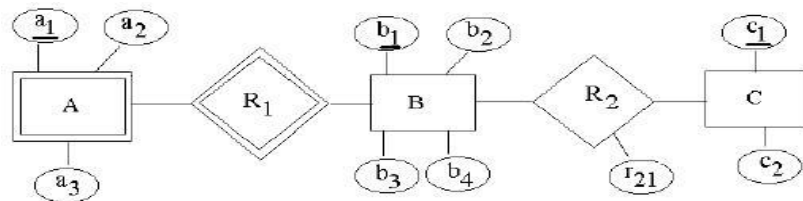
**Seat No.** :  
**Day** : Thursday  
**Max. Marks** : 36

**INSTRUCTIONS:**

1. Figures to the right indicate maximum marks for that question.
2. The symbols used carry their usual meanings.
3. Assume suitable data, if required & mention them clearly.
4. Draw neat sketches wherever necessary.

**Q.1 Do as directed.**

- (a) Compare file system and database management system in terms of Concurrent-access anomalies. [2]
- (b) Explain the functionalities of the DROP, DELETE and TRUNCATE commands. [3]
- (c) Convert following E-R Diagram into a relational database (Tables). [2]



- (d) Define referential integrity with example. [2]
- (e) Explain discriminator with example. [1]
- (f) Define unsafe expression in TRC with example. [1]
- (g) If the closure of an attribute set is the entire relation then the attribute set is a \_\_\_\_\_. [1]  
(primary key, candidate key, super key)

**Q.2 Attempt Any Two from the following questions.** [12]

- (a) **Draw an E-R diagram for Hostel Management System. (Min. 4 Entity Sets)** [6]
- (b) Explain constraints on Generalization. [6]
- (c) (i) What is the purpose of Triggers explain with appropriate example. [3]  
(ii) Explain Audit Trails with its usage. [3]

**Q.3 (a) Answer the following questions.** [6]

**Consider the following relations with key underlined.**

**Movie(movieTitle, movieYear, length, studioName, producer#)**

**MovieStar(starName, address, city, gender, birthdate)**

**StarsIn(movieTitle, movieYear, starName)**

**Multiplex(mNo, movieTitle, name, address, netWorth)**

**Studio(studioName, address, pres#)**

**Write the following queries in SQL:**

- (i) Find star name who has worked in movie ABC. [2]
- (ii) Apply a constraint on relation Movie that movie title should be in upper case. [1]
- (iii) Retrieve all the information from MovieStar where address is not specified. [1]
- (iv) Change netWorth of a Multiplex 'M101' to 20000. [1]
- (v) Select all the information of Movie where the movie's title must contain the character 'h' at third position and 'a' at last position in the name. [1]
- (b) **Write the Tuple Relational Calculus for the following queries:** [6]
  - (i) Retrieve all the information of MovieStar who has worked in movie 'ABC'. [2]
  - (ii) Find starName, address who live outside 'Bombay' and gender is Male. [2]
  - (iii) Retrieve Movies whose netWorth is above 20000. [2]

OR

- Q.3** (a) **Answer the following questions.** [6]  
(Consider above relation schema)  
**Write the Relation Algebra for following queries :**  
(i) Delete all the movieTitle associated with studio name is 'xyz'. [3]  
(ii) Retrieve all movieTitle and its netWorth for multiplex 'M101'. [3]
- (b) **Write Domain Relational Calculus for the following queries:** [6]  
(i) Retrieve all the information of MovieStar who has worked in movie 'ABC'. [2]  
(ii) Find starName, gender who live outside 'Bombay' and gender is Male. [2]  
(iii) Retrieve Movies whose netWorth is above 20000. [2]