

**GUJARAT TECHNOLOGICAL UNIVERSITY****B.E. Sem-III Remedial Examination March 2010****Subject code:130703****Subject Name: Data Base Management system****Date: 11 / 03 / 2010****Time: 11.00 am – 01.30 pm****Total Marks: 70****Instructions:**

1. Attempt all questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.

- Q.1 (a)** Consider following schema and write SQL for given statements. **08**
- student( rollno, name, branch)
  - exam(rollno, subject\_code, obtained\_marks , paper\_code)
  - papers(paper\_code, paper\_satter\_name, university)
- ( i ) Display name of student who got first class in subject '130703'.
- (ii) Display name of all student with their total mark.
- (iii) Display list number of student in each university.
- (iv) Display list of student who has not given any exam.
- (b)** Explain ACID properties of Transaction with suitable example. **06**
- Q.2 (a)** Draw E-R diagram for Hospital management system and covert into set of table schema. **07**
- (b)** Describe various disadvantages of file system compare to Data base management system. **07**
- OR**
- (b)** With example explain various mapping cardinalities and total participation. **07**
- Q.3 (a)** Consider following schema and represent given statements in relation algebra form. **06**
- \* Branch(branch\_name,branch\_city)
  - \* Account(branch\_name, acc\_no, balance)
  - \*Depositor(Customer\_name, acc\_no)
- ( i ) Find out list of customer who have account at 'abc' branch.
- ( ii ) Find out all customer who have account in 'Ahmedabad' city and balance is greater than 10,000.
- (iii) find out list of all branch name with their maximum balance.
- (b)** Normalize (decompose) following relation into lower to higher normal form.(From 1NF to 4 NF). **08**

PLANT	MANAGER	MACHINE	SUPPLIER_NAME	SUPPLIER_CITY
Plant-A	Ravi	Lath Boiler	Jay industry Abb appliance	Ahmedabad Surat
Plant-B	Meena	Cutter Boiler CNC	Raj machinery Daksh industry Jay industry	Vadodara Rajkot Ahmedabad

**OR**

- Q.3 (a)** What is canonical cover? Consider following set F of functional dependencies on schema R(A,B,C) and compute canonical cover for F. **06**  
A -> BC    B -> C    A -> B    AB -> C
- (b)** Consider wholesaler of booh schema. **08**  
Book(Book\_id, book\_title,publisher,book\_price)  
( i ) Implement procedure which print details of books whose price is more than average price.(Use cursor).  
(ii) Write a trigger such that if record is deleted from book table, insert old record in book\_backup table.

- Q.4 (a)** Explain various steps involved in Query evaluation. **07**  
**(b)** Explain conflict serializability with example. **07**

**OR**

- Q.4 (a)** Explain transformation of relational expression into equivalent relational expression. **07**  
**(b)** Explain view serializability with example. **07**

- Q.5 (a)** Consider schedule S with transaction T1 and T2. T1 transfer Rs. 150 from account A to C and T2 adds Rs. 50 into account A. Prepare concurrent schedule with two phase locking protocol. **05**  
**(b)** Explain various deadlock prevention methods. **05**  
**(c)** Write short note on data encryption. **04**

**OR**

- Q.5 (a)** Explain immediate database modification log based recovery method. Also explain role of check point in log base. **07**  
**(b)** Explain working of 2-phase commit protocol. **07**

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