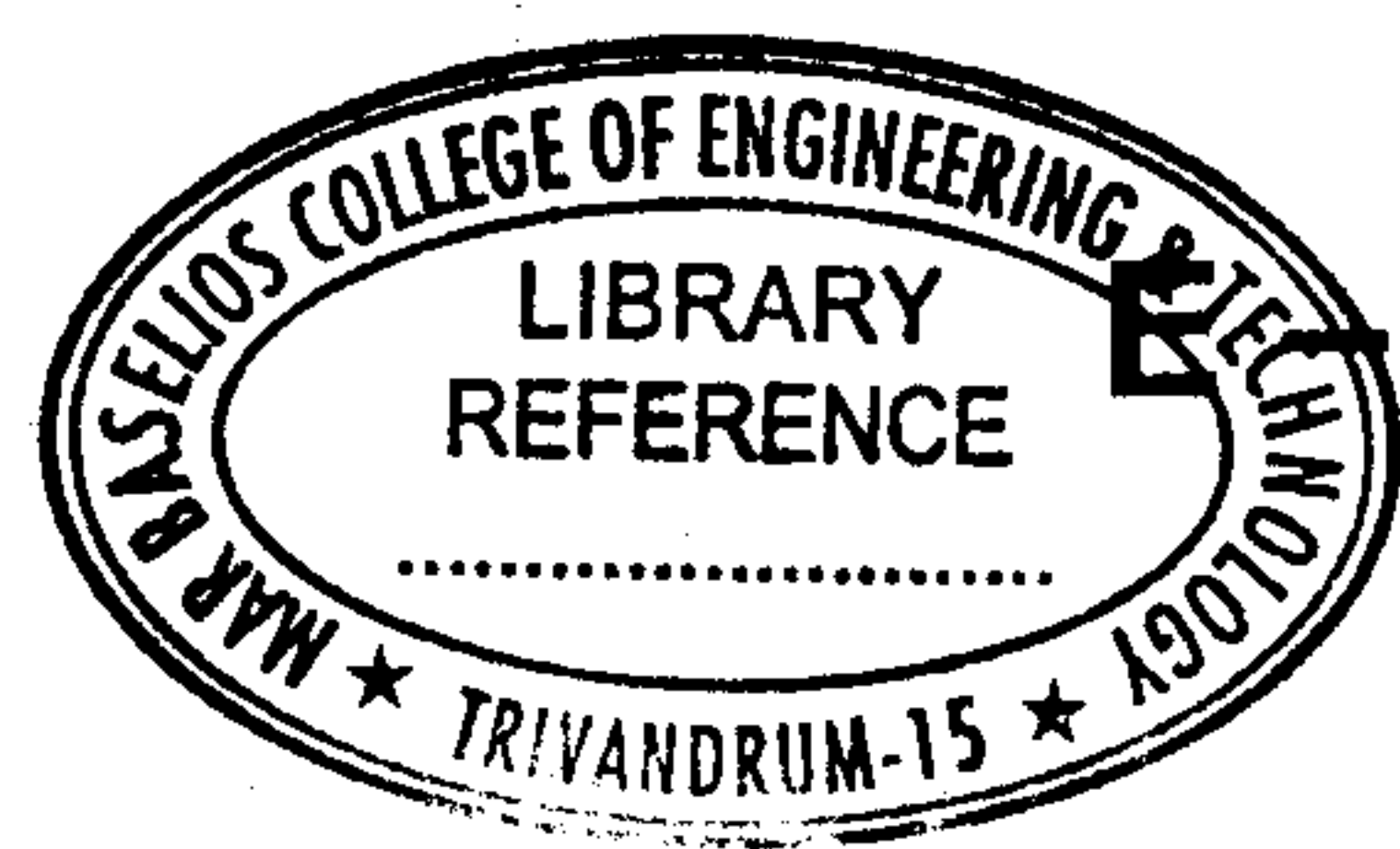




(Pages : 2)



4799

Reg. No. : .....

Name : .....

**Fourth Semester B.Tech. Degree Examination, September 2018  
(2008 Scheme)  
08.406 : DATABASE DESIGN (F)**

Time : 3 Hours

Max. Marks : 100

**PART – A**

Answer **all** questions.

1. Explain group by and having clauses in SQL.
2. Define data abstraction and give an example.
3. Briefly explain three-tier architecture of a database.
4. Differentiate procedural and non-procedural query languages.
5. What are the objectives of normalization ?
6. List out types of relationship in E-R modelling.
7. List out the types of locking modes in concurrency control.
8. Write a short note on conflict serializability.
9. What is weak entity set ? How is it different from strong entity set ?
10. List out the characteristics of B+ tree indexing. (10×4=40 Marks)

**PART – B**

Answer **any one** question from **each** Module.

**Module – I**

11. a) Compare and contrast relational model and E-R model in DBMS. 10
- b) Discuss various characteristics of DBMS approach and how it is differ from traditional file system. 10

**OR**

P.T.O.



12. a) Explain various operations in relational algebra with examples. 10  
 b) Explain how E-R diagram will convert into database table specification. 10

**Module – II**

13. a) How BCNF is differ from third normal form ? 8  
 b) Define multivalued dependency and also explain 4NF. 12

OR

14. a) Consider the following relational schema for a flight reservation database :  
 Passengers (Passenger \_id, Name, Address, Age)  
 Reservations (Passenger \_id, FlightNum, Seat)  
 Flights (FlightNum, DepartCity, DestinationCity, DepartureTime, ArrivalTime, MinutesLate)

Write the following queries in SQL :

- i) Get the names of passengers who had a reservation on a flight that was more than 30 minutes late.  
 ii) Get the names of passengers who had reservations on all flights that were more than 60 minutes late.  
 iii) Get the names of pairs of passengers who are the same age.  
 iv) Get the name of passengers whose age is > 30 and who have reserved for flight number 20. 10
- b) Consider the following two sets of functional dependencies :  $F = \{A \rightarrow C, AC \rightarrow D, E \rightarrow AD, E \rightarrow H\}$  and  $G = \{A \rightarrow CD, E \rightarrow AH\}$ . Check whether they are equivalent or not and justify your answer. 10

**Module – III**

15. a) Explain about primary indexing and secondary indexing. 8  
 b) Explain about various types of locking protocols for concurrency control. 12

OR

16. a) Explain ARIES recovery algorithm in DBMS. 12  
 b) Explain about concurrent execution of database transactions in a multiuser system ? Discuss why concurrency control is needed and give informal examples. 8