(i) Printed Pages : 3

(ii) Questions : 9

Roll No. .....

Sub. Code : 3 6 1 4

Exam. Code : 0 4 6 0

M.Sc. Information Technology 2nd Semester

(2054)

ADVANCED DATABASE PROGRAMMING AND MYSQL

Paper—M.S. 60

Time Allowed : Three Hours] **[Maximum Marks : 80**

Note :— Attempt *five* questions, selecting one question each from Section—I to IV and Section V is compulsory.

SECTION—I

1. (a) What is normalization ? Explain BCNF with example. Differentiate between BCNF and 3NF. 8

   (b) What is Data Independence ? Why is it required for a good DBMS ? Explain different types of data independence with help of example. 8

2. (a) What is ER-Models ? Explain ER Model in detail. 8

   (b) With a well labelled diagram explain 3-tier architecture of DBMS. Explain its advantages over 2-tier architecture. 8

SECTION—II

3. (a) What is Relational Algebra in context to DBMS ? Explain various relational algebra operations and give examples. 8

(b) (i) Differentiate between Tuple oriented Relation Calculus and Domain oriented Relation Calculus. 4

(ii) Explain ACID properties. 4

4. (a) What is concurrency control ? Explain different locking techniques of concurrency control. 8

(b) What are transactions ? With help of a neat diagram explain the different states of transaction. 8

SECTION—III

5. (a) What are subqueries ? How do we write subqueries, explain different types of joins with help of example. 8

(b) Explain different DDL commands related to Database and tables. Give example. 8

6. (a) What are Views and what are advantages of Views ? Explain with help of example Inline and Materalized Views. 8

(b) How information is retrieved from databases ? Explain with example. 8

SECTION—IV

7. (a) What do you mean by data warehousing ? Write its characteristics. Write the usage of Data Warehouse. 8

(b) What is Meta Data with respect to Data Warehouse ? What are its components/parts ? How is it different from meta data of DBMS ? 8

8. (a) Define Association rule mining. Explain Market Basket Analysis. 8

(b) What is decision tree ? Briefly outline the major steps of decision tree classification ? 8

SECTION—V

9. Write briefly :

(1) Define support and confidence.

(2) Define Deadlock.

(3) What is Referential Integrity ?

(4) Define Sequences.

(5) Explain Transitive Dependency.

(6) Define Generalization.

(7) Enlist MySQL Data types.

(8) List issues of Data warehouse. 8×2=16