Bachelor of Computer Application (BCA)
3rd Semester
DATABASE MANAGEMENT SYSTEM
Paper—II

Time Allowed—3 Hours]   [Maximum Marks—75

Note :— Attempt *five* questions, selecting at least *one* question from each Part. The **fifth** question may be attempted from any part.

PART—A

1. (a) List five responsibilities of the database manager for each responsibility, explain the problems that would arise if the responsibility were not discharged. 8

   (b) Compare the features of Network, Hierarchical and Relational model. 7

2. (a) Discuss the three level architecture of database management system. Explain the various types of different levels of database architecture. Explain. 8

   (b) Discuss about the components of ER Model. Give an example. 7

PART—B

3. (a) What is Normalization ? Explain the various types of normal forms with example. 8

   (b) What do you mean by recovery of database ? Discuss the various mechanisms used for the recovery of database. 7

4. (a) What are various methods of concurrency control ? Explain in detail two phase locking protocol. 8

   (b) Explain the five main responsibilities of database administrator. 7

PART—C

5. (a) Discuss the use of selection and join operators on SQL based queries. 8

   (b) What are triggers ? Also explain the use of triggers in database. 7

6. (a) How would you use the features of nested queries in SQL to develop complex queries ? Give examples. 8

   (b) Write short notes on the following terms :

   (i) DDL

   (ii) DCL. 7

PART—D

7. (a) What is Big Data ? List down various applications of Big Data. 8

   (b) Explain the five V's of Big Data. 7

8. Write detailed notes on the following :

   (a) No SQL

   (b) Data Analytics. 15