Bachelor of Science (B.Sc.I.T.) Semester–II (C.B.S.) Examination

DATABASE MANAGEMENT SYSTEM

Paper—V

Time : Three Hours] [Maximum Marks : 50

N.B. :— (1) All questions are compulsory and carry equal marks.
(2) Draw neat and labelled diagram wherever necessary.

EITHER

1. (A) Discuss any five objectives of DBMS. 5
(B) What is data model ? Explain Hierarchical data model with a suitable example. 5

OR

(C) Explain the different components of DBMS. 5
(D) Explain the database users and access rights. 5

EITHER

2. (A) Explain strong entity set and weak entity set with suitable example. 5
(B) Describe entity and relationship with example. Explain E-R diagram components. 5

OR

(C) Explain Specialization and Generalization with example. 5
(D) Construct an E-R diagram for a CRITICAL CARE HOSPITAL with a set of patients and a set of medical doctors. Associate with each patient a log of the various tests and examinations conducted. 5

EITHER

3. (A) Explain the following relational algebra operation with suitable example. 5
(B) Following relations are given :
Borrower (customer_name, loan_number)
Depositor (customer_name, account_number)
Write a query to find all customers who have both loan and account at the bank using :
(i) Natural Join (ii) Set Intersection. 5

OR

(C) Explain selection and projection relational algebra operation with suitable example. 5
(D) Explain aggregate functions with suitable example. 5

EITHER

4. (A) Explain full functional dependency, partial dependency and transitive dependency with suitable example. 5
(B) Explain 3NF with suitable example. 5

OR

(C) Explain second Normal form, whether the following table is in 2NF :

S	P#	Sc
A	1	Delhi
A	2	Delhi
A	3	Delhi
B	1	Mumbai
B	2	Mumbai

Primary key is (S, P#)
Explain the different anomalies in the above table. 5
(D) Explain multivalued dependency with suitable example. 5

5. Attempt all :
(A) Explain data independence. 2½
(B) What do you mean by single valued and multi valued attributes ? 2½
(C) Explain assignment operation. 2½
(D) What are the objectives of the normalization ? 2½