

Bachelor of Science (B.Sc.) (I.T.) Semester—II 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) Explain three level architecture of DBMS. 5
- (b) Explain network model with suitable example. 5

OR

- (c) What is DBMS ? What are the advantages of DBMS over traditional file system ? 5
- (d) What are the different roles of database administrator ? Explain. 5

EITHER

2. (a) Draw an ER diagram for Hospital Management System. 5
- (b) Explain generalization with suitable example. 5

OR

- (c) Explain the following terms with suitable example :
 - (i) Entity
 - (ii) Attributes
 - (iii) Relationships. 5
- (d) Explain the concept of Aggregation with example. 5

EITHER

3. (a) Explain selection and projection operation with suitable example. 5
- (b) Consider the following scheme of relational database. Teach (Name, Address, Course).
Write a query :
 - (i) To find a teacher with name “XYZ” and teaching course “Operating system”.
 - (ii) List name and address of teachers teaching course “JAVA” programming. 5

OR

- (c) Explain aggregate function in relational algebra with example. 5
- (d) Explain Natural join operation with suitable example. 5

EITHER

4. (a) Explain Third Normal Form (3NF) with suitable example. 5
(b) What is functional dependency ? Explain with suitable example. 5

OR

- (c) What is multivalued dependency ? Explain with example. 5
(d) Explain BCNF with suitable example. 5
5. (a) Explain various database users. 2½
(b) Explain in brief, the strong entity set and weak entity set. 2½
(c) Explain Union operation with suitable example. 2½
(d) Explain Second Normal Form (2NF). 2½