

Fifth Semester B. Sc. Examination

COMPUTER SCIENCE

Paper – II

(Database Management System)

Time : Three Hours]

[Max. Marks : 50

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

EITHER

1. (a) State disadvantages of traditional file processing system (TFPS). 5
(b) Explain Network model with example. 5

OR

- (c) Write a short note on different types of database users. 5
(d) Define Database management system. Discuss its components in brief. 5

EITHER

2. (a) Explain superkey, candidate key and primary key with example. 5
(b) Explain tabular representation of weak entity set considering suitable example. 5

OR

- (c) Discuss following mapping cardinalities
(i) one-to-one
(ii) one to many
(iii) many to one
(iv) many to many

How these cardinalities are represented in E-R diagram. 5

- (d) Define entity and explain entity set with example. 5

EITHER

3. (a) Discuss structure of Relational data base. 5
(b) Explain following fundamental operations with example :—
(i) Union
(ii) Set difference. 5

OR

- (c) Explain outer join operation with example. 5
(d) What are aggregate functions ? Explain with example. 5

EITHER

4. (a) Explain 3NF with example. 5

- (b) What is normalization ? Write advantages of representing data in a normalized form. 5

OR

- (c) Explain :—
- (i) Transitive functional dependency.
 - (ii) Multivalued functional dependency.
- (d) Write definition of 1NF. Discuss problems arising in three basic operations insert, delete and update when relation is in 1NF.
(consider suitable example). 5

5. (a) Write short note on Data Independence. $2\frac{1}{2}$
- (b) Explain relationship giving suitable example. $2\frac{1}{2}$
- (c) Explain assignment operation with example. $2\frac{1}{2}$
- (d) Explain functional dependency with suitable example. $2\frac{1}{2}$