

Bachelor of Science (B.Sc.) Semester–V Examination
DATABASE MANAGEMENT SYSTEM
Optional Paper–2
(Computer Science)

Time : 3 Hours]

[Maximum Marks : 50

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

EITHER

1. (a) Define DBMS. What are the objectives of DBMS ? 5
(b) Explain relational database model in DBMS. 5

OR

- (c) What are the issues involved in handling traditional file processing system ? 5
(d) Write a note on 'database users' in DBMS. 5

EITHER

2. (a) What do you mean by weak and strong entity set in DBMS ? Explain with example. 5
(b) Draw an E-R diagram for hospital system. 5

OR

- (c) What is generalization and specialization in DBMS ? Explain 5
(d) Explain data mapping with suitable example. 5

EITHER

3. (a) Explain natural join operation with suitable example. 5
(b) What are aggregate functions ? Explain with examples. 5

OR

- (c) SAILOR (sid, sname, rating, age)
BOAT (bid, bname, color)
RES_BOAT (sid, bid, date)
Answer the query in relational algebra to find all sailors who have rating of at least 8 or reserved boat 103. 5
(d) Explain union and intersection operation with example. 5

EITHER

4. (a) What is Functional Dependency ? Explain full and partial functional dependency with example. 5
(b) Define normalization. Define BCNF with suitable example. 5

OR

- (c) Explain the role of functional dependency in the process of normalization. 5
(d) Explain the fourth normal form giving suitable example. 5

5. (a) What are the advantages of DBMS ? 2½
(b) Explain the following with example :
(i) Single valued attribute
(ii) Multi-valued attribute
(iii) Composite attribute 2½
(c) Explain in brief set intersection operation. 2½
(d) Explain transitive functional dependency. 2½