

2125
B.Sc. Data Analytics (FYUP)
First Semester

Paper: Introduction to Database Management System

Time allowed: 3 Hours

Max. Marks: 45

NOTE: Attempt five questions in all, including Question No. 9(Unit-V) which is compulsory and selecting one question each from Unit I - IV.

x-x-x

Unit-I

1. Explain the general architecture and components of DBMS with a diagram? 9
2. Define data abstraction? Explain Internal, Conceptual and External abstraction with a suitable example and diagram? 9

Unit-II

3. Explain and draw the output tables for the following relational algebra set operators:
i) Intersection ($T1 \cap T2$) ii) Union ($T1 \cup T2$) iii) Difference ($T2 - T1$ and $T1 - T2$)

T1

Prod-Name	Product-Status
Pen	Available
Scale	Not Available
Computer	Available
File	Available

T2

Prod-Name	Prod-Status
Book	Available
Pen	Available
Duster	Not Available
Computer	Available

9

4. What is Normalisation? Why is it needed in DBMS? Explain the difference between 3NF and BCNF? 9

Unit-III

5. What are data Constraints? Discuss Column level and Table level constraints? 9
6. What are DDL commands? Explain with syntax and suitable example the DDL commands to do the following:
i) Create a table
ii) Modifying the structure of a table
iii) Destroying a table 9

Unit-IV

7. Write a short note on:
i) COMMIT and ROLLBACK 9
ii) Range Searching 9

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(2)

8. Discuss with syntax and example the use of the following SQL functions:
- (a) Aggregate functions
 - (b) Numeric functions
 - (c) String functions

9

Unit - V

9. (a) Define Data Independence?
(b) Meaning of data redundancy?
(c) Difference between Self-join and Outer join?
(d) What are database privileges?
(e) What are Views in DBMS?
(f) What is meant by tuple and degree in RDBMS?
(g) What is client-server architecture?
(h) What is a primary key?
(i) Define an entity?

9

x-x-x