

S.E. INFT SEM III NEP June 2026

8

Duration: 2 Hours

[Max Marks:60]

- N.B. : (1) Question No 1 is Compulsory.
 (2) Attempt any three questions out of the remaining five.
 (3) All questions carry equal marks.
 (4) Assume suitable data, if required and state it clearly.

09/06/2026

- 1 Attempt any THREE
- a Explain the advantages of DBMS over File system [15]
 - b Define primary key and candidate key with example. [5]
 - c Explain the following Relational algebra operations with suitable examples. [5]
 - (i) Natural Join (ii) Union [5]
 - d What are the views in SQL? Explain with an example. [5]
- 2
- a Explain need of normalization along with the all the normal forms. [8]
 - b What do you mean by serializability of a schedule? Check whether the given schedule S is conflict-serializable? [7]

T1	T2
Read(A)	
Write(A)	
	Read(A)
	Write(A)
Read(B)	
Write(B)	
	Read(B)
	Write(B)

- 3
- a Explain security and authorization in SQL in detail. [8]
 - b Define transitive functional dependency. List all the functional dependencies satisfied by the given relation. [7]

a	b	c
a1	b1	c1
a1	b1	c2
a2	b1	c1
a2	b1	c3

- 4
- a Explain in detail the different users of the database system. How do they interact with the database system? Explain in detail? [8]
 - b Explain DML and DCL commands in SQL. [7]
- 5
- a Explain Generalization, Specialization and Aggregation with example. [8]
 - b Explain ACID properties of transactions. [7]
- 6
- a Explain the following relational algebra operations with examples : [8]
 - i) Cartesian Product ii) Left Outer Join iv) Set Difference v) Select
 - b Explain functions and procedures in SQL with examples. [7]