

SE | SEM - III | IT | CBCS

(3 Hours)



[Total Marks: 80]

22 NOV 2019

- N.B.:- (1) Question No. 1 is Compulsory.  
 (2) Solve any **three** questions from the remaining **five** questions.  
 (3) **Figures to the right indicate full marks.**  
 (4) Make **suitable** assumptions wherever **necessary** and state them **clearly**.

1. (a) Define generalization and specialization. 5  
 (b) Explain different keys in DBMS. 5  
 (c) Explain role of DBA. 5  
 (d) Compare traditional file system with DBMS. 5
2. (a) List the functional dependencies which satisfy the relation: 10

X	y	z
X1	Y1	Z1
X1	Y2	Z1
X2	Y2	Z1
X2	Y2	Z1

- (b) Suppose you are given the following requirements for a simple database of the National Cricket Trophy (NCT): 10
- the NCT has many teams,
  - each team has a name, a city, a coach, a captain, and a set of players,
  - each player belongs to only one team,
  - each player has a name, a position (such as left wing or goalie), a skill level,
  - and a set of injury records,
  - a team captain is also a player,
  - a game is played between two teams (referred to as host team and guest team) and has a date (such as May 11th, 1999) and a score (such as 4to 2).

Construct ER diagram for the NCT database.

3. (a) Explain different types of operations in relational algebra. 10  
 (b) Explain Joins and types of Joins with suitable example. 10
4. (a) Define Normalization. Explain 1NF, 2NF and 3NF with suitable example. 10  
 (b) Consider the following schema for College Library. 10

Student (Roll\_no, Name, Branch)

Book (ISBN, Title, Author, Publisher)

Issue (Roll\_no, ISBN, Date\_of\_Issue)

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