



Sardar Patel Institute of Technology

Bhavan's Campus, Munshi Nagar, Andheri (West), Mumbai-400058, India

(Autonomous College Affiliated to University of Mumbai)

Makeup Examination

Jan 2019

Max. Marks: 60

Class: T.E.

Course Code: IT53

Name of the Course: Advanced Database Systems

Duration: 3 Hrs

Semester: V

Branch: Information Technology

Instruction:

- (1) All questions are compulsory
- (2) Draw neat diagrams
- (3) Assume suitable data if necessary

Q No.		Max. Marks	CO
Q.1 (a)	Compare Data-Partitioning Strategies in Parallel Database.	4	CO1
(b)	Write weaknesses of relational data model over NOSQL.	4	CO4
(c)	What is Mobile database? With appropriate example describe data management issues in mobile databases.	4	CO4
Q.2 (a)	While designing a distributed database systems what should be the layers of query processing? Explain each layer in brief.	6	CO1
	OR		
	Explain each of the following Object Oriented data modelling concepts providing an example of each concept. i) Object definition language ii) Object query language.	6	CO1
(b)	What are the different types of indexing in databases? With the help of example explain any two types of indexing.	6	CO2
Q.3(a)	While designing the distributed database what is the need of data fragmentation? If you want to use fragmentation techniques with the help of appropriate examples explain horizontal and vertical fragmentation.	6	CO1
	OR		
	Explain 2 Phase commit protocol.	6	CO1
(b)	What are the different types of type constructors? With appropriate example how to apply these type of type constructors while designing object oriented databases.	6	CO1

Q.4 (a)	What is the use of DTD in XML? Give the benefits of DTD. Compare Relational Schema with XML schema.	6	CO3
(b)	Explain the graph data structure with the help of adjacency matrix and incidence matrix.	6	CO4
	OR		
	Explain the Neo4J database.	6	CO4
Q.5 (a)	How videos are stored in database and accessed from the database?	6	CO4
(b)	While designing the distributed database what architectures are used. Explain any two architectures of distributed databases.	6	CO1
	OR		
	What are the issues of distributed database design ? Explain any three issues of distributed database design.	6	CO1