Q. P. Code: 23437

(3 Hours) **[Total Marks: 80]**

N.B. : (1) Question No. 1 is **compulsory**

(2) Solve any **three** questions out of remaining five **five**

1.	(a) Differentiate between dimension model and ER model?	5
	(b) What is the Fragmentation? Elaborate horizontal fragmentation and derived horizontal fragmentation?	5
	(c) What are the types of Single Level Ordered Indexes .	5
	(d) Explain Data Loading and its techniques.	5
2.	(a) Design a schema in SQL for college attendance system. Show one example each for primary key and foreign key constraint. Create a suitable ECA example to enforce defaulters constraint.	10
	(b) Describe 3 phases of ARIES recovery method.	10
3.	(a) Compare MAC and DAC and RBAC for multi level security.	10
	(b) What are the advantages of dynamic multilevel indexes. Explain with the help of B trees and B^+ trees	10
4.	(a) Explain concurrency control in distributed database?	10
	(b) Explain with suitable example object identity, object structure and type constructors in OODB.	10
5.	(a) What is data warehouse architecture and list its types.	10
	(b) Elaborate types of slowly changing dimension tables with the help of examples.	10
6.	(a) List the challenges in the ETL process and explain it in detail.	10
	(b) Differentiate between OLTP and OLAP.	10

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