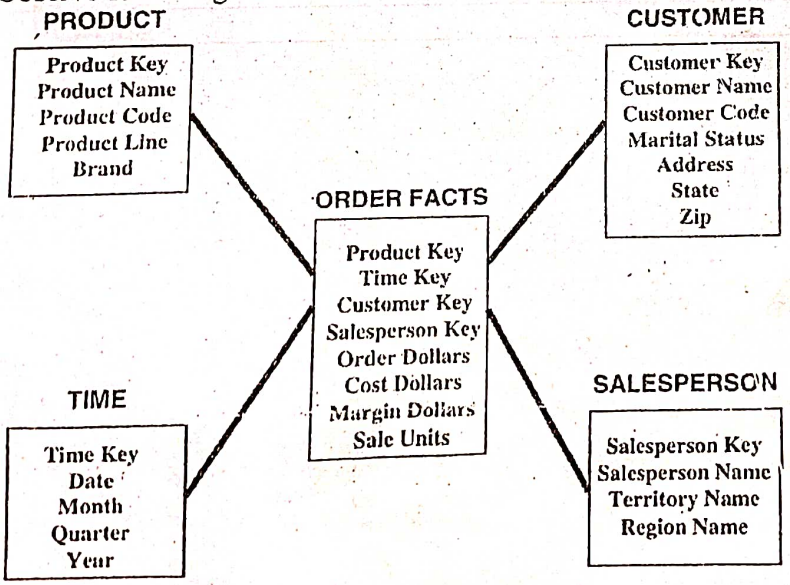
29.05.2023 (E)

SOMAIYA VIDYAVIHAR UNIVERSITY

Semester: JAN 2023 – MAY 2023		Duration: 3 Hrs.
Maximum Marks: 100	Examination: ESE Examination	
Programme code:) 04 Programme: BTech IT	Class: SY	Semester: IV (SVU 2020)
Name of the Constituent College: K. J. Somaiya College of Engineering	Name of the department: IT	
Course Code: 116U04C404	Name of the Course: Advanced Databases	
Instructions: 1)Draw neat diagrams 2) All questions are compulsory 3) Assume suitable data wherever necessary		

Que. No.	Question	Max. Marks
Q1	Solve any Four	20
i)	Describe Locational & naming Transparencies	5
ii)	Demonstrate creation of UDT's using CREATE command in ORDBMS and hence creation of table using this UDT.	5
iii)	Differentiate Data Warehouse Vs Data Marts	5
iv)	List different parameters to be considered for initial loading in Datawarehouse.	5
v)	Explain destructive and Constructive merge technique while loading /appending the data.	5
vi)	Justify the need of distributed databases.	5

Que. No.	Question	Max. Marks
Q2 A	Solve the following	10
i)	Illustrate TYPE-II changes on Data warehouse w.r.t. following points: The definition, Procedure to apply the change, Example illustrating the procedure.	5
ii)	Compare Incremental Load and Data Refresh concepts.	5
	OR	
Q2 A	Observe following Star Schema and answer the following:  1. Explain Drill Down and Roll-up operation w.r.t above table. 2. Show SLICE operation on Order_Data dimension, keeping all other dimensions' value constant.	10

	3. With an example describe DICE operation. 4. Identify Foreign keys and Primary key of the FACT table 5. If it is required to create FACTLESS FACT table, What will be the attributes in this FACTLESS FACT table?	10
Q 2 B	Solve any **One**	10
i)	Explain Primary Site and Primary Site with backup technique to implement Concurrency control in Distributed database.	10
ii)	Explain architectures and implementation basics of Distributed Databases	

Que. No.	Question	Max. Marks
Q3	Solve any **Two**	20
(i)	Explain Two Phase Commit (2PC) in distributed database system.	10
(ii)	Demonstrate the need of 3PC (Three Phase Commit) protocol (Hint: w.r.t. 2PC)	10
(iii)	What is in memory database? Which kind of applications these databases are useful? Justify your answer.	10

Que. No.	Question	Max. Marks
Q4	Solve any **Two**	20
(i)	What are aggregate fact tables? Why are they needed? Give an example.	10
(ii)	Name five types of the major transformation tasks. Give an example for each	10
(iii)	Describe types of Spatial Operators. Give detailed explanation of anyone with real life example.	10

Que. No.	Question	Max. Marks
Q5	Write notes on any **four**	20
(i)	Concurrency Control mechanism in Distributed Databases	5
(ii)	Key-Value architecture of NoSQL.	5
iii)	Meta data in data-warehouse	5
(iv)	Any one Transformation type with example	5
(v)	MOLAP model used in Data warehouse	5
vi)	Nested relations	5