



Sanjay Ghodawat University, Kolhapur

Established as State Private University under Govt. of Maharashtra. Act No XL, 2017

2018-19

EXM/P/09/01

Year and Program: 2018-19

School of Commerce and Management

Department of SY MBA

Course Code: MMC BA607

Course Title: Database Management

Semester – III

Day and Date:

Friday 14 Dec 18

End Semester Examination (ESE)

Time: Max Marks: 100

10:30 to 1:00 pm

Instructions:

- 1) All questions are compulsory.
- 2) Assume suitable data wherever necessary.
- 3) Figures to the right indicate full marks.

Q.1 Solve any Two

Mark s Bloom's Level CO

- a) Describe database schema with an example.

07 L₁ CO1

OR

- a) Identify problem in traditional database system for the following statements and illustrate solution in DBMS:

07 L₁ CO1

1) Consider two withdrawal transactions X and Y in which an amount of 100 and 200 is withdrawn from an account A initially containing 100. Now since these transactions are taking place simultaneously, different transactions may update the account differently. X reads 1000, debits 100, updates the account A to 900, whereas X also reads 1000, debits 200, updates A to 800. In both cases account A has wrong information.

2) If a student is studying two different educational programs in the same college, say Engineering and Management, then his information such as the phone number and address may be stored multiple times, once in Engineering dept and the other in Management dept. Therefore, it increases time taken to access and store data.

- b) "DBMS consist of different set of attributes supporting SQL commands". Discuss different types of entity attributes in DBMS corroborating above statement.

08 L₂ CO2

OR

- b) State and outline different mapping cardinalities in DBMS? Indicate Degree of Relationship for Figure.1.b.

08 L₂ CO2

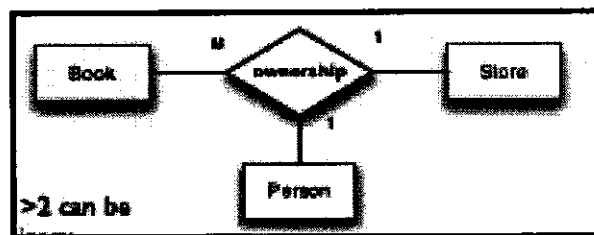


Figure.1b

Q.2 Solve any Two

- a) "Relational algebra operations can be applied for a set of relations". **07** L₃ CO3
Justify above statement with respect to relational operations.

OR

- a) Discuss the significance of integrity constraints in relational database and describe different types of integrity constraints in relational database. **07** L₃ CO3
- b) For given schema below substantiate how file system can be implemented by using fixed length record & variable length record. **08** L₆ CO4
Account_schema= (account_nubmer, branch_name, balance)

OR

- b) Depict 1NF, 2NF, 3NF normalization with the help of an appropriate example. **08** L₆ CO4

Q.3 Solve any Two

- a) Describe an E-R diagram for student database system giving a detailed account of each step. **08** L₁ CO1
- b) Elaborate DML commands in SQL with an appropriate example. **08** L₂ CO2
- c) "Commands used in specifying Indexes and Constraints enforces business rules in database". Validate written statement discussing commands used in specifying Indexes and Constraints in DBMS. **08** L₃ CO3
- d) Briefly discuss functional dependency, insertion anomalies, update anomalies and delete anomalies in a database **08** L₆ CO4

Q.4 Solve any Two

- a) Describe various properties of transaction in detail for transaction T₁ and T₂ in detail **09** L₃ CO5
- b) "A transaction has all possible sequences of states through which it may pass". Corroborate given statement with the help of transaction **09** L₃ CO5

states and possible sequences of transaction.

	c)	Discuss algorithm for testing View serializability with an appropriate example.	09	L ₃	CO5
Q.5		Solve any Two			
	a)	Elaborate the concept of lock granularity for three different database-level locks.	09	L ₃	CO6
	b)	Discuss the two-phase locking protocol for the following transactions: <div style="display: flex; justify-content: space-around; margin-top: 5px;"> <div style="text-align: left;"> T₁₁: read (a₁); read (a₂); write (a₁); </div> <div style="text-align: left;"> T₁₂: read (a₁); display (a₁); </div> </div>	09	L ₃	CO6
	c)	Describe Timestamp-Ordering Protocol for transactions in detail.	09	L ₃	CO6
Q.6		Solve any Three			
	a)	Elaborate transaction management in SQL	06	L ₃	CO5
	b)	Write a short note on "The concept of Transaction Log in DBMS"	06	L ₃	CO5
	c)	State and explain different Lock types in DBMS	06	L ₃	CO6
	d)	Discuss loss-less join dependency with reference to 5NF	06	L ₃	CO6
