

(Please write your Exam Roll No.)

Exam Roll No

Bharati Vidyapeeth's
Institute of Computer Applications and Management
A-4, Paschim Vihar, New Delhi-63
Model Question Paper-III [Sem-II]

Paper Code: MCA -108 **Subject: Database Management Systems**

Time: 3 Hours

Maximum Marks: 75

Note: Attempt FIVE questions in all. Question No. 1 is compulsory and attempt one question from each unit.

UNIT - I		
1.	Answer all the following questions briefly:-	2.5 x 10 = 25
(a)	Discuss importance of NULL values in Relational Model.	
(b)	List database applications.	
(c)	Write syntax of UPDATE command in SQL.	
(d)	State objective of Normalization.	
(e)	Differentiate between schema and instance.	
(f)	Discuss lossless join decomposition.	
(g)	Define term ACID properties.	
(h)	Differentiate between BETWEEN and IN operators in SQL.	
(i)	Define Tuple, Attribute and Domain.	
(j)	State purpose of shared locks.	
UNIT - I		
2.	(a) Explain in details about database management system advantages over file management system.	6
	(b) Discuss a case where aggregation is preferred over ternary relationship.	6.5
3.	(a) Construct an ER diagram for university registrar's office. The office maintains data about each class, including the instructor, the enrollment and the time and place of the class meetings. For each student class pair a grade is recorded. Determine the entities and relationships.	6.5
	(b) Explain Following : 1. Key constraints 2. Integrity Constraints	6
UNIT - II		
4.	(a) Discuss in detail the operators SELECT, PROJECT, UNION with suitable example?	6
	(b) Consider a relation R (A B C D E) with following FDs: F = {CE → D, D → B, C → A} Find all candidate keys. Normalize it till 3NF.	6.5
5.	(a) State BCNF. Discuss how does it differ from 3NF giving suitable examples.	6
	(b) Explain insertion, deletion and modification anomalies with suitable examples.	6.5
UNIT - III		
6.	(a) Create a table to represent a sb-account of a bank consisting of account_no, customer_name, balance_amt. Write a PL/SQL block to implement deposit and withdraw. Withdraw should not	6

		be lowed if the balance goes below Rs. 1000.	
	(b)	Explain the following terms in Oracle system: 1. Log files 2. Segments and extents 3. Database files	6.5
7.	(a)	Consider the following schemas: Sailors (sid, sname, rating, age) Reserves (sid, bid, day) Boats (bid, bname, color) Write the following queries in SQL: a) Find the name of sailors who have reserved boat 103. b) Find the names and ages of sailors with a rating above 7. c) Find the names of sailors who have reserved a red boat. d) Find the sname, bid, and day for each reservation.	6
	(b)	Explain the purpose of %TYPE and %ROWTYPE data types with the example.	6.5
UNIT - IV			
8.	(a)	Illustrate lost update problem with suitable examples.	6
	(b)	Discuss about transaction recovery techniques.	6.5
9.	(a)	Draw transaction state diagram and describe each state that a transaction goes through during its execution.	6
	(b)	Discuss serializable schedules? How can we ensure that a given schedule is serializable?	6.5