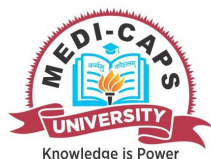


Enrollment No.....



Faculty of Engineering
End Sem Examination Dec-2023
CA5CO38 Advanced DBMS

Programme: MCA / BCA- Branch/Specialisation: Computer
MCA (Integrated) Application

Duration: 3 Hrs.**Maximum Marks: 60**

Note: All questions are compulsory. Internal choices, if any, are indicated. Answers of Q.1 (MCQs) should be written in full instead of only a, b, c or d. Assume suitable data if necessary. Notations and symbols have their usual meaning.

- Q.1 i. The logical design, and the snapshot of the data at a given instant in time is known as- **1**
(a) Instance & relation (b) Relation & schema
(c) Domain & schema (d) Schema & instance
- ii. Which of the following is a top-down approach in which the entity's higher level can be divided into two lower sub-entities? **1**
(a) Specialization (b) Generalization
(c) Aggregation (d) Distribution
- iii. A functional dependency is a relationship between or among _____. **1**
(a) Tables (b) Rows (c) Relation (d) Attributes
- iv. The fifth Normal form is concerned with- **1**
(a) Transitive dependency (b) Multivalued dependency
(c) Join dependency (d) Domain key
- v. Which of the following property of transaction that protect data from the system failure? **1**
(a) Atomicity (b) Consistency
(c) Isolation (d) Durability
- vi. Which is the most common method to ensure atomicity and durability of a transaction? **1**
(a) Shadow copy (b) Shadow paging
(c) Precedence graph (d) Deadlock
- vii. Storing a separate copy of database in multiple locations is known as- **1**
(a) Vertical partitioning (b) Horizontal partitioning
(c) Data replication (d) Data fragmentation
- viii. In a distributed database reduction of redundancy is obtained by- **1**
(a) Data sharing (b) Data compaction
(c) Data replication (d) Data fragmentation

- [2]
- ix. Which type of database is used to store geographic locations - **1**
(a) Temporal database (b) Spatial database
(c) Mobile database (d) Multimedia database
- x. Which of the following is an unordered collection of elements that may contain duplicates? **1**
(a) Set (b) Bag (c) List (d) Dictionary

- Q.2 i. Define data independence. **2**
ii. Differentiate between file system and dbms. **3**
iii. What is attribute? Explain different types of attributes with example. **5**
- OR iv. Explain specialization and generalization with suitable diagram. **5**
- Q.3 i. Write the purpose of normalization. **2**
ii. What is functional dependency? Describe various types of functional dependencies with example. **8**
- OR iii. Explain various types of normal forms with example. **8**
- Q.4 i. What are the ACID properties of transaction? **3**
ii. What is serializability? Explain following transaction is conflict serializable or not. If it is yes then find the serializability order? **7**

T1	T2	T3
R(X)		
		R(Y)
		R(X)
	R(Y)	
	R(Z)	
		W(Y)
	W(Z)	
R(Z)		
W(X)		
W(Z)		

- OR iii. Explain deferred database modification and immediate database modification recovery techniques. **7**
- Q.5 i. Describe architectures for parallel databases. **4**
ii. Explain different types of distributed database with example. **6**
- OR iii. Write a note on replication and fragmentation. **6**
- Q.6 Attempt any two:
i. Compare RDBMS with OODBMS and ORDBMS. **5**
ii. Write a note on spatial database and multimedia database. **5**
iii. Design a database with constraints for online shopping. **5**

Marking Scheme

CA5CO38 (T)- Advanced DBMS (T)

Q.1	i)	d) Schema & Instance		1
	ii)	a) Specialization		1
	iii)	d) Attributes		1
	iv)	c) Join Dependency		1
	v)	d) Durability		1
	vi)	a) Shadow Copy		1
	vii)	c) Data Replication		1
	viii)	a) Data Sharing		1
	ix)	b) Spatial Database		1
	x)	b) Bag		1
Q.2	i.	Definition	2 Marks	2
	ii.	three differences	3 Marks	3
	iii.	for definition	2 Marks	5
		types of attributes	3 Marks	
OR	iv.	Description	3 Marks	5
		Diagram	2 Marks	
Q.3	i.	for purpose	2 Marks	2
	ii.	Definition	2 Marks	8
		Types of functional dependencies	3 Marks	
		Examples	3 Marks	
OR	iii.	for type	5 Marks	8
		for examples	3 Marks	
Q.4	i.	for all four properties	3 Marks	3
	ii.	for definition,	2 Marks	7
		for finding conflict schedule	3Marks	for
		finding serializability order	2 Marks	
OR	iii.	for deferred data modification	3.5 Marks	7
		for immediate data modification.	3.5 Marks	
Q.5	i.	for different architecture	4 Marks	4
	ii.	for types and	4 Marks	6
		for example	2 Marks	
OR	iii.	for fragmentation	3 Marks	6
		for replication	3 Marks	
Q.6		Attempt any two:		

i.	five comparison point	5 Marks	5
ii.	for spatial database and	2.5 Marks	5
	for multimedia database	2.5 Marks	
iii.	for database design with constraints?	5 Marks	5
