(2 Hours 30 min) **(Total Marks: 75)**

N.B:

1. **All questions are compulsory.**
2. **Figures to the right indicate marks.**
3. **Illustration, in-depth answers, and diagrams will be appreciated.**
4. **Mixing of sub-questions is not allowed.**
5. **Each question carries 5 marks.**

1		**Attempt any Three**	**15**
	a	Explain Distributed Database Management System	
	b	Explain Location and Fragmentation Transparency.	
	c	Explain Advantages and Disadvantages of DDBMS	
	d	What are the factors of DDBMS?	
	e	Explain Peer-to-Peer architecture for DDBMS	
	f	Explain Local,Global and External sachems of Peer to Peer	
2		**Attempt any Three**	**15**
	a	Explain Three Phase Commit Protocol	
	b	Explain Parallel Database System	
	c	Explain ACID properties.	
	d	What is concurrency Control?	
	e	Explain Thomas' Write rule	
	f	Explain Intra Query Parallelism	
3		**Attempt any Three**	**15**
	a	What is GIS?	
	b	What are the types of spatial data?	
	c	Explain logical data model for spatial database.	
	d	Explain ODMG model.	
	e	Explain Temporal database.	
	f	Explain the features of object-oriented database.	
4		**Attempt any Three**	**15**
	a	Explain Active database with example.	
	b	Explain Multimedia database System.	
	c	What is the use of attributes in XML.	
	d	What is the use of XML DTD	
	e	Explain deductive database.	
	f	Explain difference between structured, sem-structured and un- structured data in XML database.	
5		**Attempt any Three**	**15**
	a	Explain levels multi-DBMS	
	b	What is fragmentation?	
	c	Write a short note on query optimization.	
	d	Define Transaction with its properties.	
	e	Explain different format used to represent geographic data..	
	f	Explain datalog notation.	

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