

Advance Database Management (315324)

MSBTE K-Scheme · IF / AN Semester 5 · Important Questions (repetition analysis of previous papers)

Based on MSBTE papers S-2024...S-2026 available on msbte.ac.in. For this course only two K-scheme papers exist so far: **W-2025 and S-2026**. Practice guidance only — not a prediction of the exam. Probability: **High** = asked in both papers, **Medium** = asked in one paper, **Low** = in the K-scheme syllabus but not asked yet. “Asked in” shows question number and marks; the last column shows where the topic is covered in our model papers (Set A / B / C).

Most repeated topics

#	Topic	Unit	Papers	Times asked
1	Benefits / advantages (and disadvantages) of distributed database	II	2 of 2	4
2	Lock (define, S/X modes) and Two-Phase Locking protocol	I	2 of 2	3
3	Array and multiset types in SQL (syntax / example)	III	2 of 2	3
4	Basic operations in MongoDB shell (CRUD with syntax / example)	IV	2 of 2	3
5	MongoDB find() with query criteria / OR queries / insertMany	IV	2 of 2	3
6	Concurrency control — types of protocols / advantages	I	2 of 2	2
7	Parallel vs distributed database	II	2 of 2	2
8	Table inheritance in SQL	III	2 of 2	2
9	FLWOR expression in XQuery	III	2 of 2	2
10	XQuery joins and nested queries	III	2 of 2	2

Unit I — Database System Architecture (syllabus weight 10 marks)

Question / topic	Marks	Asked in	Probability	Model sets
Lock (define, S/X modes) and Two-Phase Locking protocol	2 M, 6 M	S-26: Q1a 2M W-25: Q1g 2M, Q5b 6M	High	A1b, A3a, B1a, B2a, B5a, C1b, C5a
Concurrency control — types of protocols / advantages	2 M	S-26: Q1g 2M W-25: Q1a 2M	High	A1a, C1a, C3a
Centralized database system architecture	4 M	S-26: Q2a 4M	Medium	A2a, C1c
Transaction server vs data server (server system architecture)	4 M	S-26: Q4a 4M	Medium	A6a, B3a
Two-tier client-server database model	4 M	W-25: Q4b 4M	Medium	C2a
Granting of locks / lock-compatibility matrix	—	Not asked yet (in syllabus)	Low	B1a, B5a

Unit II — Parallel & Distributed Database System (syllabus weight 12 marks)

Question / topic	Marks	Asked in	Probability	Model sets
Benefits / advantages (and disadvantages) of distributed database	2 M, 4 M, 6 M	S-26: Q1b 2M, Q6c 6M W-25: Q1b 2M, Q2a 4M	High	A1c, A5b, C2b
Parallel vs distributed database	4 M, 6 M	S-26: Q2b 4M W-25: Q6b 6M	High	B2b, C6a
Measures of performance — throughput, response time, speedup, scaleup	2 M, 6 M	S-26: Q1f 2M, Q6a 6M	Medium	A4a, B1b, C3b
Parallel database architectures (shared memory / disk / nothing / hierarchical)	4 M	W-25: Q3d 4M	Medium	A2b, B4d
Distributed database system architecture (diagram)	4 M	W-25: Q4e 4M	Medium	A5b, B3b
Transaction processing in parallel / distributed systems (2PC)	4 M	S-26: Q3a 4M	Medium	B6c, C4a
Homogeneous vs heterogeneous distributed database	—	Not asked yet (in syllabus)	Low	A4e, B1g

Unit III — Object Based Database & XML (syllabus weight 18 marks)

Question / topic	Marks	Asked in	Probability	Model sets
Array and multiset types in SQL (syntax / example)	2 M, 4 M, 6 M	S-26: Q1c 2M, Q4b 4M W-25: Q6c 6M	High	A5a, B5b, C1d
Table inheritance in SQL	4 M	S-26: Q2c 4M W-25: Q3a 4M	High	A1e, A2c, C4b
FLWOR expression in XQuery	2 M, 4 M	S-26: Q3c 4M W-25: Q1c 2M	High	A1d, B4a, C3c
XQuery joins and nested queries	2 M, 6 M	S-26: Q5b 6M W-25: Q1f 2M (nested query syntax)	High	A5c, C5b
Complex data types	4 M	W-25: Q2b 4M	Medium	C2c
XQuery vs XPath	4 M	W-25: Q4a 4M	Medium	B1c, A4b, C6c
XML document schema (DTD / XML Schema)	6 M	W-25: Q6a 6M	Medium	B6b
Object-oriented vs object-relational database	4 M	S-26: Q4c 4M	Medium	B4e
Structured types and type inheritance in SQL	—	Not asked yet (in syllabus)	Low	B2c, B5b
Structure of XML data	—	Not asked yet (in syllabus)	Low	A3c, C1g

Unit IV — NoSQL & MongoDB (syllabus weight 18 marks)

Question / topic	Marks	Asked in	Probability	Model sets
Basic operations in MongoDB shell (CRUD with syntax / example)	4 M, 6 M	S-26: Q5c 6M W-25: Q2c 4M, Q3c 4M	High	A2d, A6b, C5c
MongoDB find() with query criteria / OR queries / insertMany	4 M, 6 M	S-26: Q3b 4M, Q4e 4M W-25: Q5a 6M	High	A4c, B1e, B3c, C4d
SQL vs NoSQL comparison	4 M	S-26: Q4d 4M W-25: Q3b 4M	High	A3b, C2d
Benefits of NoSQL	2 M	W-25: Q1d 2M	Medium	B1d
Types of NoSQL databases	2 M	S-26: Q1d 2M	Medium	A1f, C1e
Output of commands in MongoDB shell (JavaScript, Date, strings)	4 M	W-25: Q4d 4M	Medium	B5c
Structured vs unstructured data	4 M	S-26: Q2d 4M	Medium	B2d
MongoDB data types, arrays, embedded documents	—	Not asked yet (in syllabus)	Low	B4b, C4c

Unit V — Data Mining & Warehousing (syllabus weight 12 marks)

Question / topic	Marks	Asked in	Probability	Model sets
Data warehouse architecture / components	4 M, 6 M	S-26: Q5a 6M W-25: Q2d 4M	High	A3d, B6a
Characteristics of data warehouse	2 M	W-25: Q1e 2M	Medium	A1g
Functions of data-warehouse tools (ETL)	2 M	S-26: Q1e 2M	Medium	B1f, C3d
Applications of data mining	4 M	W-25: Q4c 4M	Medium	A4d
Data mining vs data warehousing	6 M	W-25: Q5c 6M	Medium	C4e
Classification and clustering	4 M	S-26: Q3d 4M	Medium	A6c, C1f
Data lakehouse — components and advantages	6 M	S-26: Q6b 6M	Medium	B3d
Decision-tree classifier, validating a classifier	—	Not asked yet (in syllabus)	Low	C6b
Association rules (support, confidence)	—	Not asked yet (in syllabus)	Low	B4c
Virtual warehouse	—	Not asked yet (in syllabus)	Low	C3d

Paper pattern (same in both papers)

Q.	Attempt	Marks
1	any FIVE of 7 (2 marks each)	10
2	any THREE of 4 (4 marks each)	12
3	any THREE of 4 (4 marks each)	12
4	any THREE of 5 (4 marks each)	12

5	any TWO of 3 (6 marks each)	12
6	any TWO of 3 (6 marks each)	12
Total (3 hours)		70

Unit weightage as per K-scheme syllabus: I – 10, II – 12, III – 18, IV – 18, V – 12 marks. Units III and IV carry the most marks and most of the program-type questions (SQL object features, XQuery, MongoDB queries) — practise writing them.

Note: This is an **important-questions list prepared by Ananda Technologies** only for practice and exam preparation, based on the pattern of previous MSBTE question papers and the K-scheme syllabus. It is **not an official MSBTE paper**, and it does **not** mean that these questions will come in the exam. Answers follow standard textbook points; marks shown are indicative. Free for students — anandatechnologies.in

