Exam Number: _____

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B.E. 7th (REG/ ATKT) EXAMINATION MARCH 2025

Subject Name: Web Data Management | Subject Code: IT701-N

Date: 27/03/2025(Thursday) Time: 12.30 pm to 03.30 pm | Total marks: 70

Instructions:

1. **Answer each section in separate Answer sheet.**
2. **All questions are compulsory.**
3. **Indicate clearly, the options you attempt along with its respective question number.**
4. **Use the last page of main supplementary for rough work.**

Section-I

Q.1(A)	Explain the role of XML in Web Data Management and its key advantages.	(5)
Q.1(B)	Explain XPath steps and path expressions with suitable examples.	(5)
Q.1(C)	What are XLink and XPointer in XML? How are they used for linking and referencing?	(5)
	OR	
Q.1(C)	What is semi-structured data, and how does it differ from structured and unstructured data?	(5)
Q.2 (A)	Explain the "for and let clauses" in XQuery with examples.	(5)
Q.2(B)	Explain the role of automata in defining and validating XML structures.	(5)
	OR	
Q.2 (A)	What are FLWOR expressions in XQuery, and how do they work?	(5)
Q.2(B)	Define graph semi-structured data and explain its significance in data representation.	(5)
Q.3 (A)	Explain the concept of data guides and their role in navigating semi-structured data.	(5)
Q.3 (B)	What is XML fragmentation, and how does it improve query processing?	(5)
	OR	
Q.3 (A)	Enlist XML Identifiers. What are Dewey-based identifiers, and how do they help in XML data organization?	(5)
Q.3 (B)	What is a structural join in XML query evaluation? Explain with an example.	(5)

Section-II

Q.4 (A)	Explain URI and namespaces and their role in web resource identification.	(5)
Q.4 (B)	How does RDF Schema (RDFS) extend RDF? Discuss its significance.	(5)
Q.4 (C)	What is DL-LITE, and how is it used for answering ontology-based queries?	(5)
	OR	
Q.4 (C)	Compare OWL (Web Ontology Language) with RDF Schema.	(5)
Q.5 (A)	Explain the notation and semantics used in querying RDF data.	(5)
Q.5 (B)	Compare Global-as-View (GAV) mediation and Local-as-View (LAV) mediation in data integration.	(5)
	OR	
Q.5 (A)	What are Peer-to-Peer (P2P) Data Management Systems, and how do they handle data integration?	(5)
Q.5 (B)	How do ontology-based mediators facilitate semantic data integration?	(5)
Q.6 (A)	Explain the role of web crawlers in web search and indexing.	(5)
Q.6 (B)	What are hash-based structures, and how are they used in distributed indexing?	(5)
	OR	
Q.6 (A)	What are the key failure management strategies in distributed systems?	(5)
Q.6 (B)	How does distributed computing with MapReduce help in processing large-scale data?	(5)

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