

**Indian Statistical Institute  
Documentation Research and Training Center**

**MS in Library and Information Science  
Semester Exam (IV semester) (2024-2026)  
Paper –18: SEMANTIC WEB (THEORY)**

Date: 27.04.2026

Max Marks: 60  
Time: 3 Hours

*Answer any four questions. All questions carry equal marks.*

1. What is a Knowledge Graph? Describe the usefulness of Knowledge Graphs (KGs) on the Web. Briefly explain the various reasoning tasks performed by a reasoner. [2+8+5]
2. Describe with examples, the steps involved in designing a domain ontology. [15]
3. Briefly describe the following two technologies with examples: RDFS and OWL. Also, compare their advantages and limitations for knowledge representation. [7+8]
4. (a) Illustrate the following four object property characteristics in OWL with suitable examples: (i) Symmetric property; (ii) Transitive property; (iii) Reflexive property; (iv) Inverse functional property. [10]  
(b) Explain the significance of ontologies in information retrieval. [5]
5. Write short notes on two of the following: [7½ \* 2]  
(a) Simple Knowledge Organization System (SKOS)  
(b) Types of ontologies  
(c) SPARQL query forms