R20 Regulation *Subject code: 3P7GE*

TKR COLLEGE OF ENGINEERING AND TECHNOLOGY

(Autonomous, Accredited by NAAC with 'A+' Grade)

B.Tech VII Semester Regular Examinations, November 2023

SEMANTIC WEB

(CSE (ARTIFICIAL INTELLIGENCE & MACHINE LEARNING))

Maximum Marks: 70 Date:08.12.2023 Duration: 3 hours

Note: **1.This question paper contains two parts A and B.**
2. Part A is compulsory which carries 20 marks. Answer all questions in Part A.
3. Part B consists of 5 Units. Answer any one full question from each unit which carries 10M.
4. Each question carries 10 marks and may have a, b, c, d as sub questions.

Part-A

	All the following questions carry equal marks (10x2M=20 Marks)	
1	Define Lightweight ontology.	L1
2	What are the examples of using the non-semantic web page?	L1
3	What is RDF schema in Semantic Web?	L1
4	Name two popular RDF syntaxes used to represent RDF data.	L1
5	What are bindings in SPARQL theory?	L1
6	What is a SPARQL filter, and how is it used in query construction?	L1
7	What is the significance of profiles in OWL2?	L1
8	Write any two advantages of using OWL2 in conjunction with RDF and RDFS for semantic modeling.	L1
9	Give an example Monotonic Rules.	L3
10	What is the rule markup language?	L1

Part-B

	Answer All the following questions. (5X10M=50Marks)	
11	A. Assess the use of Semantic Web solutions. [3] B. What are examples of Semantic Web technologies? Explain them. [7]	L4 L1
	OR	
12	Explain about the aggregating and reasoning with social network data with respect to the notion of equality in detail. [10]	L2
13	A. Explain the concept of axiomatic semantics in the context of RDF and RDF Schema. [5] B. Discuss the basic components of the RDF data model. [5]	L2 L2
	OR	
14	A. Describe the fundamental concept of RDF and its role in the Semantic Web. [5] B. Compare and contrast ant two RDF syntaxes. [5]	L2 L3
15	A. Describe the fundamental concept of matching patterns in SPARQL queries, including triple and binding patterns. [6] B. Provide an example of a SPARQL query. [4]	L2 L3

	OR	
16	A. Discuss the other forms of SPARQL queries with example. [5] B. Explain the "Follow Your Nose" principle and their importance in Semantic Web. [5]	L2 L2
17	Describe the primary constructs and features of the OWL language, such as classes, individuals, properties, and axioms. [10]	L2
	OR	
18	Explain the followings OWL profiles briefly (i) OWL2 EL (ii) OWL2 QL, (iii) OWL2 RL [3+3+4]	L2
19	Describe the syntax of non-monotonic rules and how they differ from monotonic rules. [10]	L2
	OR	
20	A. Explain the role of rules in Semantic Web and their significance in knowledge representation [5] B. Explain the semantics of monotonic rules. [5]	L2 L2