Reg.No.:												

VIVEKANANDHA COLLEGE OF ENGINEERING FOR WOMEN
[AUTONOMOUS INSTITUTION AFFILIATED TO ANNA UNIVERSITY, CHENNAI]
Elayampalayam – 637 205, Tiruchengode, Namakkal Dt., Tamil Nadu.

Question Paper Code: 50008

B.E. / B.Tech. DEGREE END-SEMESTER EXAMINATIONS – NOV. / DEC. 2024
Seventh Semester
Computer Science and Engineering
U19CSV26 – SEMANTIC WEB
(Regulation 2019)

Time: Three Hours Maximum: 100 Marks

Answer ALL the questions

Knowledge Levels	K1 – Remembering	K3 – Applying	K5 - Evaluating
(KL)	K2 – Understanding	K4 – Analyzing	K6 - Creating

PART – A

(10 x 2 = 20 Marks)

Q.No.	Questions	Marks	KL	CO
1.	Interview the syntactic web differ from semantic web.	2	K3	CO1
2.	Summarize the components of external and internal DTDs.	2	K2	CO1
3.	Outline the vocabulary differentiating RDF and RDFS.	2	K2	CO2
4.	List the principles followed in Semantic Web.	2	K1	CO2
5.	List the requirements for ontology languages.	2	K1	CO3
6.	Show the tree representation of subclass relationships between OWL and RDF/RDFS.	2	K2	CO3
7.	Construct the syntax for the monotonic rules for "all loyal customers aged over 60 are entitled to a special discount".	2	K3	CO4
8.	Define defeasible in nonmonotonic Rules.	2	K1	CO4
9.	List the properties of e-learning characteristics.	2	K1	CO5
10.	Experiment with simple web services vs complex web services.	2	K3	CO5

PART – B

(5 x 13 = 65 Marks)

Q.No.		Questions	Marks	KL	CO
11.	a)	Explain in detail about Semantic Web Technologies.	13	K2	CO1
		(OR)			
	b)	Explain in detail about DTD and XML Schema with examples.	13	K2	CO1
12.	a)	Organize subclass hierarchy and Instance relationships of primitives RDFS.	13	K3	CO2
		(OR)			
	b)	Infer RDF Schema with syntax in details.	13	K2	CO2
13.	a)	Explain the three species of OWL along with relationships of OWL and RDF/RDFS.	13	K2	CO3
		(OR)			
	b)	Construct an African Wildlife Ontology using rdfs: comment.	13	K3	CO3
14.	a)	Consider a graph with nodes and directed edges, and let an edge from node "a" to node "b" be represented by a fact edge (a, b). Define a binary predicate path which is true for nodes "c" and "d" if there is a path from "c" to "d" in the graph.	13	K3	CO4
		(OR)			
	b)	Build RDFS and OWL that can be expressed using monotonic rules. For example, the subclass relation is represented as $c(X) \rightarrow c'(X)$ (c is a subclass of c′).	13	K3	CO4
15.	a)	Explain in detail about Commercial and Non-Commercial uses of RDF.	13	K2	CO5
		(OR)			
	b)	Organize the web services and its types of knowledge.	13	K3	CO5

PART – C

(1 x 15 = 15 Marks)

Q.No.		Questions	Marks	KL	CO
16.	a)	Construct the RDF data model or Ontology for the RDF/XML syntax extension providing an attribute to specify the source of triples in an RDF/XML data model representation. <rdf:RDF xmlns:rdf ="http://www.w3.org/1999/02/22-rdf-syntax-ns#" xmlns:cos ="http://www.inria.fr/acacia/corese#"	15	K3	CO2

```
                    xmlns:s
                ="http://example.org/students/vocab#"
                cos:graph  ="http://ns.inria.org/example1/" >
    <rdf:Description
rdf:about="http://example.org/courses/6.001">
                <s:students rdf:parseType="Collection" >
                <rdf:Description
rdf:about="http://example.org/students/Amy">
                    <s:mark>A</s:mark>
                </rdf:Description>
                <rdf:Description
rdf:about="http://example.org/students/Mohamed"
                cos:graph="http://ns.inria.org/example2/" >
                    <s:mark>B</s:mark>
                </rdf:Description>
                <rdf:Description
rdf:about="http://example.org/students/Johann">
                    <s:mark>B</s:mark>
                </rdf:Description>
                </s:students>
    </rdf:Description>
</rdf:RDF>
```

(OR)

b)	Compare the various use cases of Semantic Web in future.	15	K2	CO5