Problem	1	2	3	4	Total
Points:	16	8	20	26	70
Score:					

This homework assignment has 4 problems, for a total of 70 points.

1. (16 points) Identify all of the following statements that are true about the basics of services.

    A. Services are best applied in building large-scale systems using the client-server model

    B. Screen-scraping from a web-page is convenient for system implementation because it protects us from the meaning of the information that is obtained

    C. Formulating goals for agents representing business partners or user is a high-level way of instructing such agents

    D. Distributed settings make it easier to ensure consistency than do centralized settings

    E. A major benefit of traditional Electronic Data Interchange (EDI) is that it placed one party in charge of maintaining the document schema and process specifications that all its partners complied with

    F. Distributed enactments are subject to the (potential) hazards of race conditions

    G. One of the biggest challenges in realizing the vision of service-oriented computing is ensuring that the parties involved interact in a trustworthy manner

    H. Autonomic computing deals with interactions among autonomous agents

2. (8 points) Identify all of the following statements that are true about conceptual modeling

    A. If a value map satisfies the properties of totality, monotonicity, and consistent inversion, then we know it is correct

    B. A theoretical motivation for consistent inversion is to lose as little information as we can despite the fact that it may not be possible to perfectly align the value sets at hand

    C. All else being equal, we prefer a knowledge representation that is easier to elaborate

    D. All else being equal, we prefer a knowledge representation that supports expressing incomplete knowledge about an entity

3. (20 points) Identify all of the following statements that are true about OWL

    A. It is inconsistent to declare a class that is disjoint with itself

    B. The intersection of an OWL class C with any of its superclasses equals C itself

    C. Only an OWL Object Property may be declared to be a Functional Property

    D. It is inconsistent to declare a Functional Property whose domain is an empty class

    E. It is inconsistent to declare a Functional Property whose range is an empty class

    F. Only an OWL Object Property may be declared to be a Transitive Property

    G. Assuming we can declare a property as being *irreflexive*, we can model that a person is not his or her own sibling by asserting isSiblingOf to be symmetric, transitive, and irreflexive

    H. A restriction is one of the more complicated kinds of an axiom in the OWL language

    I. Given any property P and class C, any restriction of P with respect to some values from C is a subclass of any restriction of P with respect to all values from C

    J. Whereas RDF assertions can be spread over many input files, OWL assertions need to be placed in the same input file for the OWL semantics to apply

4. (26 points) Identify all of the following statements that are true about RDF

      A. RDF supports assertions to capture a frame-like knowledge representation

      B. RDF relies upon literals being named via URIs

      C. Each vertex in an RDF graph corresponds to exactly one statement

      D. A reasonable criterion for assessing RDF models is how easy it is to draw useful inferences from a particular representation

      E. In an RDF-based representation, an adverb such as _quickly_ necessarily maps to a resource

      F. The typical event-based representation discussed in class (an event being modeled as a resource with properties asserted on it) can lead to spurious inferences because it is not context sensitive

      G. Using RDF, we cannot express self-referential statements

      H. In RDF reification applies to one statement at a time

      I. Using RDF, we can reify any literal into a statement

      J. RDF supports aggregating resources wherein if you delete a resource all its constituent resources are deleted as well

      K. In RDF, a property is simply a kind of resource

      L. In RDF, a resource is simply a kind of property with only one argument

      M. The rdf:domain of rdf:domain is rdf:Property