Take Test: Mock Exam

Test Information

Description

Instructions

This exam paper consists of 4 questions. Please complete all questions in the paper by typing your answers in the appropriate text boxes in VITAL. You might choose to work offline, but the answers will need to be entered in VITAL. Please note you only have one attempt to complete the exam paper, no multiple attempts are allowed. Please carefully check your work before submitting.

As this is not a timed exam, you are able to return to the exam paper at any time during the period May 11th -- May 13th. Please make sure you save your answers as often as possible, and that you submit the exam when you have finished. The exam is implemented as a VITAL test, but the auto-submit option is not enabled and therefore you will have to submit your test when you have finished, and before the end of May 13th.

The total time that you are expected to use to complete this paper is 1 hour

Question Completion Status:

Please make sure that you read the wording of each question carefully, and double check your answers before submitting.

Multiple Attempts	Not allowed. This Test can only be taken once.
Force Completion	This Test can be saved and resumed later.

QUESTION 1

10 points Save Answer

Discuss the definition of ontology in computer science and explain the role they play in ontology based information systems. (4 marks are awarded for the discussion of the definition and 6 marks are awarded for explaining how ontologies are used in ontology based information systems)

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Click Save and Submit to save and submit. Click Save All Answers to save all answers.

QUESTION 2

20 points Save Answer

Explain what inference rules are and how they are used in the context of reasoning with RDF(S). **(5 marks)**

Given the RDF graph G below:

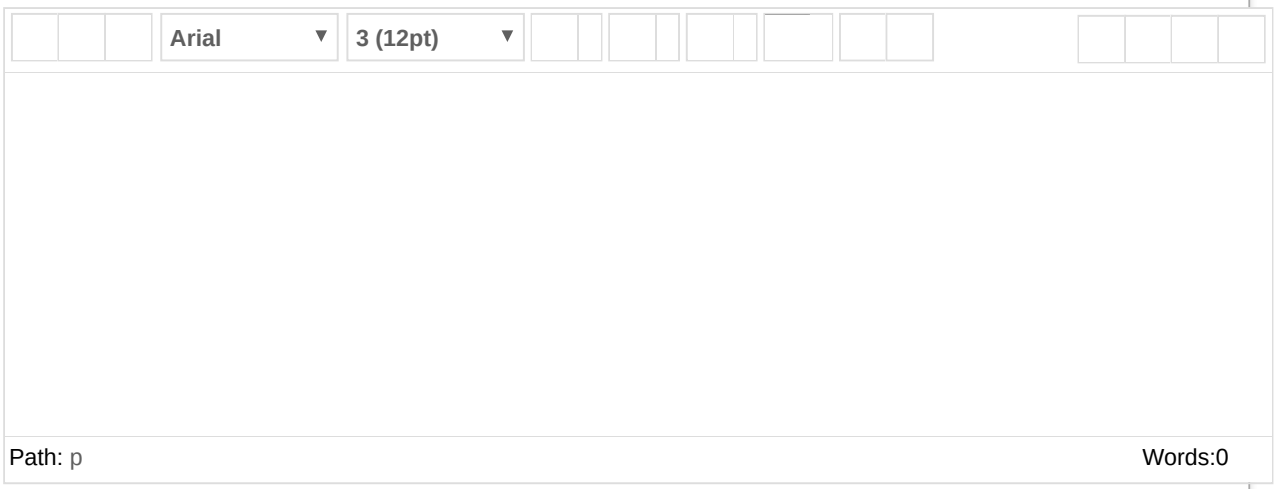
```
1. :Person a rdfs:Class.
2. :Man    a rdfs:Class;
3.     rdfs:subClassOf :Person.
4. :Parent a rdfs:Class;
5.         rdfs:subClassOf :Person.
6. :Father a rdfs:Class;
7.         rdfs:subClassOf :Parent;
8.         rdfs:subClassOf :Man.
9. :Child a rdfs:Class;
10.       rdfs:subClassOf :Person.
11. :hasParent a rdf:Property;
12.            rdfs:domain :Person;
13.            rdfs:range :Parent.
14. :hasFather a rdf:Property;
15.            rdfs:subpropertyOf :hasParent;
```

Question Completion Status:

```
18:          rdfs:domain :Person;
19.          rdfs:range :Parent.
20. stella a :Person;
21.        :hasFather :paul.
22. paul a :Man.
```

For each of the statement below, decide if the graph G entails the given statement(s) and explain why this is the case, or why this is not the case. If the answer the statement(s) is entailed by G, then use the appropriate entailment rules to prove that your answer is correct. If the answer is “no”, then explain, informally or formally, why this is so. Each answers to the following statements is worth 5 marks:

1. `:Father rdfs:subClassOf :Person .`
2. `:paul a :Parent .`
3. `:stella :hasParent _:x .`



QUESTION 3

16 points Save Answer

Click Save and Submit to save and submit. Click Save All Answers to save all answers.

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Path: p Words:0

QUESTION 4

24 points Save Answer

Represent the following statements in the most appropriate ontology language. Justify your choice. Please note some statements can be represented in more than one language whilst others can only be modelled using one ontology language. The modelling of the statement is awarded 1 mark, and 2 marks are awarded for the discussion of the appropriate ontology language to use.

Model representing the statements listed below by using the following URIs -

Question Completion Status:

a. Person, Woman, and Man are classes;

b. Man is a subclass of Person;

c. isWifeOf and isHusbandOf are functional properties;

d. isWifeOf has domain Woman and range Man;

e. paul is a Man;

f. Wife is ~~not~~ a Person who is not a Husband;

g. a Husband is someone who has at least been married once;

h. LifetimeWife is a Wife who has one husband and only one husband;

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Path: p Words:0

Click Save and Submit to save and submit. Click Save All Answers to save all answers.