Two hours - on line

The exam will be taken on line.
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QUESTION PAPER MUST NOT BE REMOVED FROM THE EXAM ROOM

UNIVERSITY OF MANCHESTER
SCHOOL OF COMPUTER SCIENCE

Semi-structured Data and the Web

Date: Friday 18th January 2013
Time: 14:00 - 16:00

Please answer ALL Questions provided.

The exam contains MULTIPLE CHOICE, TRUE/FALSE and SHORT ESSAY QUESTIONS.
Be sure to answer ALL Questions.

Please note that wrong answers on MULTIPLE CHOICE and TRUE/FALSE questions may be penalized (i.e. receive some small negative mark) so random guessing works against you.

This is a CLOSED book examination

The use of electronic calculators is NOT permitted
Questions 1-23 are restricted and cannot be published
24. Describe “well-formedness of an XML document” in one or two sentences.
(2 marks)

25. Describe “a validating XML parser” in one or two sentences.
(2 marks)

26. Describe “the DOM tree or infoset of an XML document” in one or two sentences.
(2 marks)

27. Describe “a PSVI” in one or two sentences.
(2 marks)

28. Discuss, in 4-5 sentences, when and why using a schema that does not correspond to a single-type grammar can be appropriate.
(5 marks)

29. Discuss, in 4-5 sentences, whether it is advantageous for XML to have rather many different schema languages.
(5 marks)
30. Briefly (in 4 - 5 sentences) explain the advantages and disadvantages of using XPath as a schema language over DTDs. (5 marks)

31. Write a DTD that describes the following XML document. Strive for a fairly tight, but sensible DTD. (It should be about 6 declarations long. Minor syntax errors and variation are ignored.)

```xml
<dispute>
  <topic>Programming is difficult to learn</topic>
  <participants>
    <person nick="bijan" position="pro" />
    <person nick="sara" position="con"/>
  </participants>
</dispute>
```

(6 marks)

32. Briefly (in 4 - 5 sentences), discuss the proposition that a format

- for an XML schema language (whether for DTDs or WXSs or something else)
- in XML (i.e., where each schema is a well-formed XML document)

is more likely to result in published schemas with errors in them than a format in a more suitable language. (5 marks)