ПАМIВIА UПIVERSITY
OF SCIENCE AND TECHNOLOGY

FACULTY OF COMPUTING AND INFORMATICS

DEPARTMENT OF COMPUTER SCIENCE

QUALIFICATION: BACHELOR OF COMPUTER SCIENCE (SYSTEM ADMINISTRATION AND CYBER SECURITY)	
QUALIFICATION CODE: 07BACS, 07BCCS	**LEVEL:** 6
COURSE: Web Technologies	**COURSE CODE:** WTN620S
DATE: November 2019	**SESSION:** 1
DURATION: 2 Hours	**MARKS:** 70

FIRST OPPORTUNITY EXAMINATION QUESTION PAPER	
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MODERATOR:	Mr Gereon Koch Kapuire

THIS QUESTION PAPER CONSISTS OF 3 PAGES

(Including this front page)

INSTRUCTIONS

1. Answer ALL the questions on the answer scripts.
2. Write clearly and neatly.
3. Number the answers clearly.
4. NUST examination rules and regulations apply.

PERMISSIBLE MATERIALS

1. None.

1) Discuss the following web technologies concerning developing interactive and Web 3.0 compliant web applications.

     a)   Asynchronous JavaScript and XML (Ajax). **[6]**

     b)   Document Object Model (DOM). **[6]**

     b)   JavaScript Object Notation (JSON). **[6]**

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2) Discuss the key challenges that brought to the evolution of Web 3.0, known as the Semantic Web. **[5]**

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3) Given below is JavaScript code that allows the user to input two numbers and displays the total of the two values.

```
<script>
var number1;
var number2;
var sum=0;
    number1 = parseFloat(prompt("Enter the first number: "));
    number2 = parseFloat(prompt("Enter the second number: "));
    sum = number1 + number2;
document.write("The sum of " +number1+ " and " +number2+ " is " +sum);
</script>
```

a) It would be a problem if the user input strings instead of integers. Write the correct statement that would resolve this issue. **[10]**

a) Discuss two advantages of creating a different JavaScript file, instead of just having JavaScript in the HTML file. **[4]**

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4) Given in Figure 1 is an XML file representation of a conference paper. Generate the equivalent conference paper XML file of the diagram shown in Figure 1. **[12]**
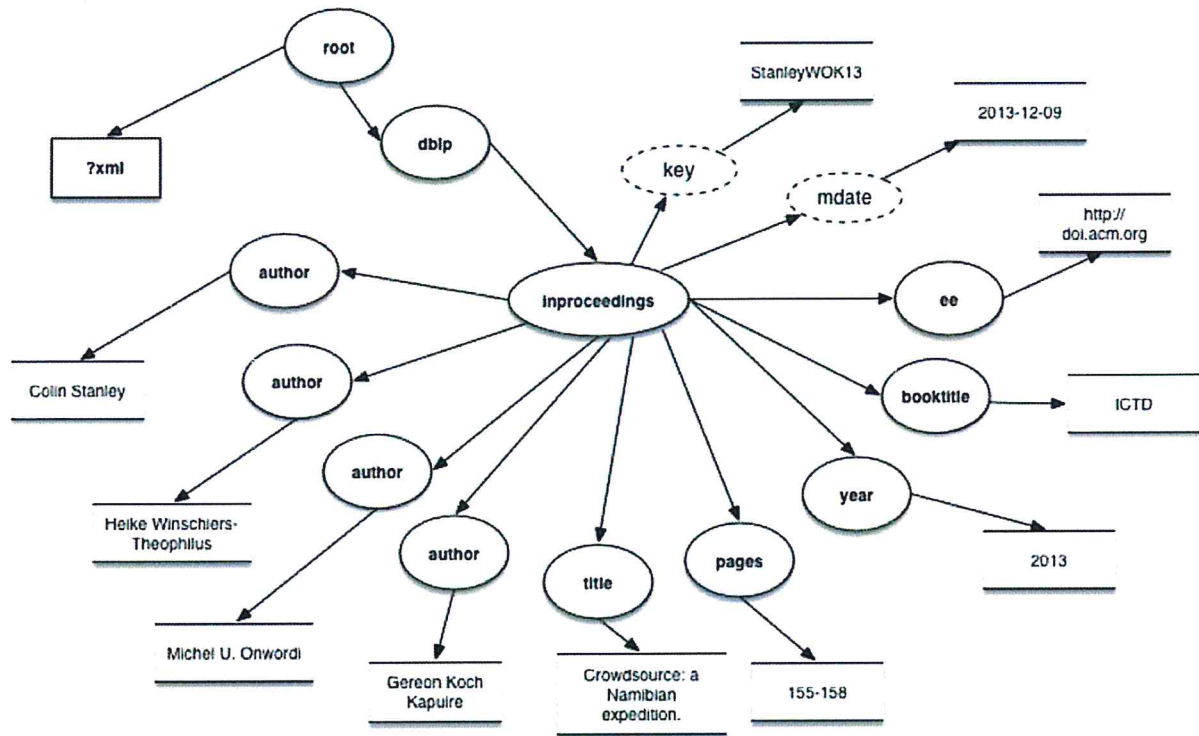
Figure 1: ConferencePaper.xml visualised.

5) Resource Description Framework (RDF) provides quite several implementations for Semantic Web. However, it also comes with disadvantages. Elaborate on these challenges. **[6]**

6) Discuss how the Model-View-Controller framework was implemented in your Web Technologies group project. **[15]**

-- End of Exam Question --