

Name: _ _ _ _ _

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COMP 4711 Midterm Exam

Oct 29, 2008

Instructions:

You have 50 minutes to complete the midterm exam.
This exam is out of 34 marks.

There are 12 multiple choice questions, worth one (1) mark each.
There is a single correct (or most correct) answer to each of these.

There are six fill-in-the-blank questions, worth 2 marks each.

Use a visible writing instrument of your choice,
but make sure your writing is legible and your selections clear.

No books, calculators, laptops, cellphones, or cheat sheets are permitted.

Multiple Choice Section – 1 mark each

1. To simply *display the server's system date* on a client's web page, which of the following JSP script is utilized?

- (a) `<% new java.util.Date() %>`
- (b) `<%! new java.util.Date() %>`
- (c) `<%@ new java.util.Date() %>`
- (d) `<%= new java.util.Date() %>`
- (e) `<jsp: new java.util.Date()/>`

2. Which of the five *tiers*, in a five-tier distributed application, would JSPs be found in?

- (a) Business
- (b) Client
- (c) Integration
- (d) Presentation
- (e) Resource

3. Java code in a *scriptlet* in a JSP file will be:

- (a) Executed by the client
- (b) Executed by the servlet
- (c) Ignored
- (d) Translated into XML
- (e) Used to build an XSL stylesheet

4. In an XML file, *markup* is:

- (f) Passed directly to the application
- (g) Processed by the XML parser
- (a) Related to the formatting of the file
- (b) Used to construct a DTD
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- (c) None of the above

5. The *namespace specification* contained in the `<garage xmlns="tree">` element tag specifies that:

- (a) All succeeding names in the document will be qualified with **tree**
- (b) The default qualifier for names within the **garage** element is **tree**
- (c) The **garage** namespace will use the qualifier **tree**
- - - - -
- (d) All of the above
- (e) None of the above

6. Which of the following describes the correct relationship between *attributes* and *elements*?

- (a) Attributes can have elements
- (f) Attributes can have nested elements or attributes, but not both
- (g) Elements can have attributes
- (h) Elements can have nested attributes
- - - - -
- (i) None of the above

7. How many XML files can a single XSL stylesheet be applied to?

- (a) None (XSL stylesheets cannot be applied to XML files)
- (b) 1
- (c) All XML files that match the template in the stylesheet
- (d) 5
- (e) An arbitrary number

8. Which organization or company is responsible for the *reference implementation* of XML and related conventions?

- (a) Apache Foundation
- (b) IBM
- (c) Microsoft
- (d) Object Management Group
- (e) WWW Consortium

9. XML is useful for displaying *tabular data* on the internet because:

- (a) Content and formatting can be separated
- (b) Schema can be used to generate tables
- (c) Tables cannot be displayed using HTML
- (d) XML has special table constructs
- (e) XPATH allows tables to be generated quickly

10. Which of the following is provided as a starting point for implementing your own *event processing for SAX*?

- (a) ContentHandler
- (b) DefaultHandler
- (c) DocumentBuilder
- (d) DocumentHandler
- (e) SAXHandler

11. Which of the following conventions or frameworks most closely matches *Java collections*?

- (a) DOM
- (b) DTD
- (c) JDOM
- (d) SAX
- (e) XSL

12. Which of the following is the best explanation of a *webapp context*?

- (a) Container for web applications
- (b) NetBeans project for building a webapp
- (c) URL identifier recognized by a web server
- (d) Website built using JSPs
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- (e) All of these are good definitions of a webapp context

Fill-In-The-Blanks Section [2 marks each]

13. An XML document element that *has no children* is called a _____ node.

14. The *XMLOutputter delegate* which deals with the appearance of a generated XML document is called a _____.

15. The *SAX event* that you need to handle in order to get the text value of an element is _____.

16. The *JSP reference implementation*, that we use in a NetBeans project, is _____.

17. Two reasons that XML supports *interoperability* are _____ and _____.

18. If processing the XML fragment below using an XSLT, and currently inside the `<name>` element, the *XPATH expression* to reference the `<title>` value would be _____.

```
<customer cust_id="12345">
  <name>
    <first_name>Bob</first_name>
    <last_name>Smith</last_name>
  </name>
  <title>Manager</title>
  <company>My Company Inc.</company>
</customer>
```

19. *Match the conventions* or techniques in the left column with the corresponding fragment in the right column. There should five lines when done, with no endpoint having more than one line connected to it.

| <i>Convention</i> | <i>Fragment</i> |
|-------------------|----------------------|
| DTD | ...order@id |
| HTML | <h1>Order 7... |
| XML | <order id="7"> |
| XSD | ATTLIST order id ... |
| XSL | name="order" |

20. A DTD is shown below. Write a valid XML fragment that conforms to it and that has at least four elements.

```
<!ELEMENT GARAGESALE (DATE, ITEM*)>
<!ELEMENT DATE (#PCDATA)>
<!ELEMENT ITEM (#PCDATA)>
```