

The use of any auxiliary material is strictly forbidden. Answer each question.

1. Explain the following terms in the course context:
 - a) Apache Ant
 - b) Compound step (according to XProc)
 - c) Dublin Core (DC) metadata standard
 - d) FLWOR expression (according to XQuery)
 - e) Internal DTD subset
 - f) DITA maps and topics

Listing 1.

```
<music xml:space="preserve">
  <record id="zc-j-2006" xml:lang="en" media="cd">
    <head><title>Album</title> <artist idref="zc-fi">Zen Café</artist>
    </head><tracks><track>Song 1</track> <track>Song 2</track></tracks>
    <dc:description xml:lang="fi">...</dc:description>
  </record>
</music>
```

2. Write an XML DTD that properly models Listing 1. We require that there can be many `record` elements and the attribute `id` is unique and optional. The attribute `media` can only have the values `wma`, `mp` or `cd`, and it has default value `cd`.
3. Assume a single music XML document as above. Write an XSL transformation that prints out (in the following order) the names of the artists, and for each artist, the names of the known records.

To simplify this task as a pen and paper assignment, you may assume that the elements `xsl:stylesheet` and `xsl:output`, and the prefix `xsl` are defined for you, and you don't have to repeat them in your answer.

4. Briefly introduce the Document Object Model Level 2 Core API and give an example how to use it in an application.