The following documents are allowed during the exam:

1. Documents in Compendium 1, printed on colored paper.
2. Documents in Compendium 2, printed on colored paper.
4. Documents in Compendium 7, printed on colored paper.
5. Ordinary language dictionaries between English and Swedish.

Note 1: Compendium 4, 5, 6, 8 and 9 are not allowed during the exam. The exam supervisor will check that you do not have copies of compendiums 4, 5, 6, 8 and 9 printed on color paper. Bringing such compendiums on colored paper is cheating and can result in suspension of your rights to study.

Note 2: Underscoring and short handwritten notes in the yellow documents are allowed.

Note 3: A few copies of these compendiums (part 1-3 and 7) will be available for loan during the exam for students who have not bought the compendiums.

Important warning

It is not acceptable to answer an exam question by just a verbatim quote from the allowed documents above. You must show that you understand the question and your answer by using your own words.

Jacob Palme will come to the exam rooms around 11:00 to answer questions regarding the exam.
Continued from the previous page.

<table>
<thead>
<tr>
<th>No.</th>
<th>Question in English</th>
<th>Question in Swedish</th>
<th>Max points</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Write an ABNF specification for Swedish social security numbers, permitting both the old format 41 02 01-1410 and the new format 1941 02 01-1410. You are not required to ensure that the check digit agrees with the preceding digits.</td>
<td>Skriv en ABNF-specifikation för svenska personnummer, tillåtande både det äldre formatet 41 02 01-1410 och det nyare formatet 1941 02 01-1410. Du behöver inte se till att checksiffran stämmer med föregående siffror.</td>
<td>6</td>
</tr>
</tbody>
</table>

**Answer:**

\[
pnumber = [ 2*\text{DIGIT} ] 2*\text{DIGIT} " " 2*\text{DIGIT} " " 2*\text{DIGIT} "-" 4*\text{DIGIT}
\]

| 3   | There are two major transfer modes used today in file transfer with FTP. Which are the modes, and how do they differ? | Idag används två överföringsmoder för filöverföring med FTP. Vilka är de, och hur skiljer de sig? | 6 |

**Answer:**

Binary or image: The file is transferred entirely unchanged.

Text: Character set conversion and conversion of end-of-line character can occur during transmission.
If an HTML text contains the command

\[ \langle p x=y \rangle \text{word word word}\langle /p \rangle \]

then you can control the size and font of the text where \( x \) can have the values: "font", "size", "style", "class", "id" and suitable values for \( y \).

Compare these methods, their advantages and drawbacks.

<table>
<thead>
<tr>
<th>Attribute</th>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>font</td>
<td>Old way of specifying font, causes cluttered HTML with lots of font attributes everywhere.</td>
</tr>
<tr>
<td>size</td>
<td>Old way of specifying font size, causes cluttered HTML with lots of size attributes everywhere.</td>
</tr>
<tr>
<td>style</td>
<td>Used in special cases, where a particular format is wanted but use of style sheets is not wanted.</td>
</tr>
<tr>
<td>class</td>
<td>Refers to separate style sheets, which gives neater code and opportunity to use a joint style sheet for several pages.</td>
</tr>
<tr>
<td>id</td>
<td>Only one element can have the same id.</td>
</tr>
</tbody>
</table>

Answer:
4. Write a specification for transferring the content of a spreadsheet via XML. You need only to handle the simplest kind of spread sheets, with just constants and formulas, no advanced features like merged cells, fonts, cell widths or borders.

Note: Constants need not be transferred. Both XML and DTD should be specified.

As an example, show how this very simple spreadsheet can be sent with the notation you specify:

---

**ANSWER:**

**DTD**

```xml
<!ELEMENT spreadsheet (row*)>
<!ELEMENT row (cell*)>
<!ATTLIST row identifier CDATA #REQUIRED>
<!ELEMENT cell (#PCDATA)>
<!ATTLIST cell identifier CDATA #REQUIRED>
```

**XML**

```xml
<?xml version="1.0" standalone="no"?>
<!DOCTYPE spreadsheet SYSTEM "http://dsv.su.se/jpalme/xml/spreadsheet.dtd">
<spreadsheet>
  <row identifier="1">
    <cell identifier="A">1</cell>
    <cell identifier="B">=A1*2</cell>
    <cell identifier="C">=B1+1</cell>
  </row>
  <row identifier="2">
    <cell identifier="A">=A1*2</cell>
    <cell identifier="B">=A2+1</cell>
    <cell identifier="C">=B2+1</cell>
  </row>
</spreadsheet>
```