



Institutionen för Data-
och Systemvetenskap



STOCKHOLMS
UNIVERSITET



KUNGLIGA
TEKNISKA
HÖGSKOLAN

***:96 (SU) and 2I1263 (KTH)
Internet Application Protocols
and Standards**

Exam 2001-01-16 solved

The following documents are allowed during the exam:

1. Documents in Compendium 1, printed on coloured paper.
2. Documents in Compendium 2, printed on coloured paper.
3. Documents in Compendium 3, printed on coloured paper.
4. Ordinary language dictionaries between English and Swedish.

Note 1: Compendium 4, 5 and 6 are not allowed during the exam.

Note 2: Some students may have the compendiums from the previous time this course was given. Some of these compendiums have yellow paper only on the front page of the allowed documents, and there was a separate document Appendix A: ASN.1 syntax (basic items) which is allowed during the exam.

Note 3: Compendium 4 was wrongly printed on yellow paper in August 1998, but is not allowed during the exam.

Note 4: A few copies of these compendiums (part 1-3) 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.

Questions during the exam

Jacob Palme will not be reachable by phone during the exam.

Notification of result by e-mail

The results of the exam will be published in Daisy, and you will automatically get a message in First Class when the results are ready. If you do not have any First Class account, and want notification if you failed in the exam, then write your e-mail address on the front of the exam folder.

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No.	Question in English	Question in Swedish	Max points
1.	<p>Some platforms represent end of line with LF characters, some with CR characters, some with a CRLF sequence of two characters.</p> <p>How is transfer of texts with line breaks handled when using the SMTP, FTP and HTTP standards.</p>	<p>Vissa plattformar representerar radslut med LF-tecken, andra med CR-tecken och andra med en sekvens av två tecken CR+LF.</p> <p>Hur hanteras överföring dokument med radslut när man använder SMTP, FTP och HTTP-standarderna?</p>	6
	<p>In SMTP, all line breaks must be sent as CRLF, CR or LF alone may not be used to indicate a line break (2).</p> <p>In HTTP, all three kinds of line breaks can be sent on the line, and the receiving end will usually convert line breaks to the convention on the receiving platform (2).</p> <p>In FTP, files can be transferred in either binary or text mode. In binary mode, line breaks are passed as they are, and neither sender nor recipient will convert to the format suitable on the receiving platform (1). In text mode, line breaks are always sent as CRLF (1).</p>		
2.	<p>Usenet News servers keep their data bases up to date by checking what is new in neighbouring servers. Which mechanisms do they use to avoid downloading the same article twice from two different neighbouring servers?</p>	<p>Usenet-news-servrar håller sina databaser aktuella genom att kolla vad som är nytt i närliggande servrar. Vilken mekanism använder de, för att hindra att de hämtar samma artikel mer än en gång från olika närliggande servrar?</p>	6
	<p>There are two basic methods for this:</p> <p>SUCK: Where the server to be updated connects to other servers to ask for new articles. With this method, the NEWNEWS (2) NNTP command can be used.</p> <p>PUSH: Where the server which has new articles connect to other servers and gives them the new articles. In this case, the IHAVE (2) NNTP command can be used.</p> <p>In reality, PUSH is more common than SUCK (so the exam question was wrongly formulated to imply the opposite), because it is more efficient.</p> <p>With both NEWNEWS and IHAVE, a list of the Message-Ids (2) of new articles is first transferred, and the receiving server can check which of these articles it already has.</p> <p>In addition to NNTP, also other bulk transfer protocols as well as ordinary e-mail is sometimes used for PUSH transmission of news.</p> <p>In addition to the Message-ID, other tools are also used to avoid sending an article to a server which already has it. If it is known that the receiving server has received everything up to a certain date-time, articles arriving at the sending server before this date-time can be omitted. And if the Path (2) header of an article shows that it has already been at a particular server, it need not be offered to this server again.</p>		

No.	Question in English	Question in Swedish	Max points
3	<p>How can style sheets in HTML be used to indicate that some, but not all, paragraphs are to be shown with reduced font size.</p> <p>In the style sheet, you specify a subclass of the <p> (paragraph) command, for example with a statement like this in the style sheet:</p> <pre>P.small {font-size: 12px}</pre> <p>You then refer to this in the body with a statement like this:</p> <pre><P class="small">This is small text.</p></pre> <p>Here is a complete example of a HTML document using style sheets to get different paragraphs in different font sizes:</p> <pre><HTML><HEAD> <TITLE>CSS Demo</TITLE> <STYLE type="text/css"> P.small { font-family: Verdana, Arial, sans-serif, Geneva, Helvetica; font-size: 12px} P.big { font-family: Verdana, Arial, sans-serif, Geneva, Helvetica; font-size: 20px} P { font-family: Verdana, Arial, sans-serif, Geneva, Helvetica; font-size: 16px} </STYLE> </HEAD> <BODY BGCOLOR="#FFFFFF"> <P class="big">This is big text.</p> <P>This is normal text.</p> <P class="small">This is small text.</p> </BODY></HTML></pre> <p>This will look something like this on the screen:</p> <div style="border: 1px solid black; padding: 10px; margin: 10px 0;"> <p style="font-size: 20px; margin: 0;">This is big text.</p> <p style="font-size: 16px; margin: 10px 0 0 0;">This is normal text.</p> <p style="font-size: 12px; margin: 10px 0 0 0;">This is small text.</p> </div> <p>Note: The following alternative notation will also work:</p>	<p>Hur kan man använda style sheet i HTML för att ange att vissa, men inte alla, stycken skall visas med mindre typsnitt.</p>	6



No.	Question in English	Question in Swedish	Max points
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4	Specify an SMTP service extension to prevent a message to be routed through MTAs in certain countries, on its way from sender to recipient.	Specifera en utvidgning av SMTP som hindrar att ett meddelande passerar MTA-er i vissa länder på sin väg från avsändare till mottagare.	6
<p>The Skip Countries (SKIPC) ESMTP extension specifies that a message should not be transmitted through certain countries.</p> <p>The name of the Skip Countries service extension is "SKIPC".</p> <p>The EHLO keyword value associated with this extension is "SKIPC".</p> <p>A new SMTP verb "SKIPC" is defined. The SKIPC verb should be specified before any RCPT-TO verb for a particular message, and is valid for this message only. The syntax of the SKIPC verb is:</p> <pre>skipc = "SKIPC" ":" domain *(" " domain) domain = domainpart *("." domainpart)</pre> <p>Example to stop a message from passing Russia or Siemens in Germany:</p> <pre>S: <wait for connection on TCP port 25> C: <open connection to server> S: 220 dbc.mtview.ca.us SMTP service ready C: EHLO dsv.su.se S: 250-dbc.mtview.ca.us says hello S: 250 SKIPC C: MAIL FROM:<jpalme@dsv.su.se> C: SKIPC:ru siemens.de</pre>			