**Exam sample**

1.a) Write an html document with the answer to the following question (about 10 lines): What is XPath and what it is good for ? Give some examples.

1.b) Write the CSS code for a horizontal line ocupying all the width of the screen,having the height of 4 pixels and the background a linear color gradient from blue to white and back to blue.

2) Write a javascript which counts all the letters from the text in an html document. The text from inside all DIV, SPAN, P, A, TABLE tags should be considerred. You are not allowed to use any CSS code for this. In addition, the javascript code should consider all the text from the document as a huge string and create 2 new divs: one containing the characters from odd positions in this string and another containing the characters from even positions; this huge string should also be printed/written separately in the document.

3) Develop a web application in PHP/JSP/ASP.NET for a gaming site. The users must first login in order to use the application. Then each user can play one or more games. Games are organized in levels (i.e. each game has a specific level); there are five levels: 1, 2, 3, 4, 5. Initially, a new user can play only games from level 1, since the other levels are locked. When the user completes a game of level x, all games from level x+1 are unlocked and the user can play another game from any level between 1 and x+1 (inclusive). A game consists of a number of questions (not a constant number), each question having 2 possible answers, a correct one and a wrong answer. When the user plays a game, all questions from the game (with their possible answers) are displayed on the screen and the game is considerred completed if the user answers correctly to all questions from the game. A completed game from level x is worth x points for the user. The user can press a button from the application at any time, and this buttons shows the list of all games completed by the current user. Another button then causes a javascript code to compute the total points obtained by the user (remember: a completed game of level x is worth x points). The user should see the list of completed tests and points obtained even if he completed them in the past (not in the current session).

You need to use a relational database and this database should contain only/exactly the following tables:

1) Table Users: user(string), password(string), completedTests(string)

2) Table Tests: id(int), testname(string), level(int)

3) Table Questions: id (int), testid (int), question(string), correctAnswer(string), wrongAnswer(string).

TOTAL TIME: 2.5 hours.