Name_____ Lastname_____ Student number [ ][ ][ ][ ][ ][ ]

Net-Computing
academic year 2008-09

Rules

- This is a closed books exam.
- The operation of any electronic device is prohibited (e.g, no calculator, phone or PDA).
- Answer the questions being *precise*, *complete*, and *formal*.
- Write as *clearly* as possible, both in terms of handwriting and wording.
- If possible, please write in English, otherwise Dutch.

Questions

1. Explain which type of applications are specifically suited for either TCP or UDP.

2. Explain how iterative and recursive name resolution operates, and what the different effects they have on bandwidth and caching.

3. Consider the following snippet of Java code and answer the following questions:

   (a) Explain the two parameters of the Socket method invocation and their role in interprocess communication.

   (b) Is this an instance of RMI? Motivate the answer.

   (c) Illustrate what the code does, making the necessary assumptions on effects of the Socket method invocation.

   ```
   void scan()
   {
       try
       {
           Socket s = new Socket("www.cocacola.com",80);
           s.close();
       }
       catch (SocketException e) { System.out.println(e); }
       catch (IOException e) { System.out.println(e); }
   }
   ```

4. In the context of Web programming, describe the difference between a static page and an active one. Then, describe the different phases of the browser-server interaction when a request for a Web page with weather information about Honolulu is issued.

5. In a room there are three devices able to communicate and to compute. There are two temperature sensors and one humidity sensor. Supposing that each device has a Java Virtual Machine and that the humidity sensor holds a lookup service, describe the following interaction in terms of the Jini technology: a heater appears on the network, if it can find a temperature sensor and a humidity sensor then it wants to acquire information from both and only in the case it has both readings, possibly turn itself on and raise the temperature. Modify the above interaction description if any passage is not possible with the current Jini technology.