

Name: _____

ID: _____

CSE 459 Internet Programming

Spring 2011 Midterm Exam

12.04.2011 Tuesday, Duration: 90 minutes

Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	SUM
/14	/10	/14	/12	/16	/10	/12	/12	/100

Q1- a) (6 pts) Write three advantages of concurrent programming

```
public class SomeClass {  
    .....  
    public synchronized void SomeMethod() {  
        sharedData ++;  
    }  
    .....  
}
```

b) (4 pts) Write an equivalent of the above code using **synchronized** block instead of **synchronized** keyword.

c) (4 pts) How would your answer in b) change if SomeMethod() was a static method?

Name: _____

ID: _____

Q2 – (10 pts) What is the problem of blocking I/O in Java socket programming? Explain with an example.

Q3 – a) (6 pts) Name two RMI-related classes/interfaces, and shortly describe what each of those classes/interfaces is used for.

b) (4 pts) Write the key difference between RMI and Remote Procedure Call (RPC) in a single sentence. (Answers with more than a single sentence will get zero grade)

c) (4 pts) Write the key difference between RMI and CORBA in a single sentence. (Answers with more than a single sentence will get zero grade)

Q4 – (12 pts) Suppose that you are writing a server program and you want any client program written in any programming language and running on any operating system could communicate with it. Which technology (socket programming, RMI, object serialization, etc) would you use? Which programming language would you prefer? Why?

Name: _____

ID: _____

Q5 – (16 pts total)

JSP CODE
<pre><HTML> <HEAD><TITLE> Fifth Question of Exam: Not so hard! </TITLE></HEAD> <BODY> <H1>Welcome!!</H1> Your name is: <%= request.getParameter("name")%> <% int birthyear = Integer.parseInt(request.getParameter("birthyear"));%> You are <%= 2011 - birthyear %> years old. </BODY> </HTML></pre>
SERVLET CODE
<pre>public class FifthQuestion extends HttpServlet { public void doGet(HttpServletRequest request, HttpServletResponse response) throws ServletException, IOException { ... out.println(docType + "<HTML>\n" + "<HEAD><TITLE> Fifth Question of Exam: Not so hard! " + "</TITLE></HEAD>\n" + "<BODY><H1>Welcome!!</H1>\n" + " Your name is: " + _____ _____ _____ _____ _____ "</BODY></HTML>"); } }</pre>

- a) (9 pts) Both the JSP code and Servlet code given above do the same job. So, fill in the blanks.
- b) (7 pts) Can you see any problem in the above codes? If yes, how would you handle it? If no, you are probably missing a point. Look more carefully.

Name: _____

ID: _____

Q6 – (10 pts) Suppose that you are implementing a web page including images, using Servlet. You may send images to the clients as png files or jpeg files. You would prefer to send png files, but you know that some of the browsers do not support png type. What would you do?

Q7 – (12 pts) Why Java sessions go away when the client browser closed? How would you let sessions live accross browser restarts?

Q8 – (12 pts) For each of the following statements, state whether it is true or false.

- a. JSP is slower technology than Servlet since JSP code is translated to Servlet code for each request.
- b. You can use OutputStream in a JSP code when returning binary data.
- c. Scriptlets need not be complete Java expressions.
- d. Any task JSP pages can perform could also be accomplished by Servlets.
- e. `jsp:include` is more powerful than `include` directive (`<%@ include ...%>`)
- f. `isThreadSafe` attribute of JSP page directive is very useful in preventing concurrent access.