

# CSC 309 Summer 2007

## Study Guide for the Final Exam

### Format

1. Similar to the midterm exam, scaled up to 3 hours instead of 1 hour
2. 6 short answer questions
3. 1 programming section with 8 questions of which only 6 need to be answered
4. The same weight ratio between short answer and programming as in the midterm
5. One double-sided sheet with notes allowed (with student name and ID on it)
6. One short answer question is a choice between guest 1, guest 2, or course material

### Topics

1. XHTML
2. CSS
3. DOM
4. Applets
5. Web usability
6. HTTP
7. Servlets
8. Transactions
9. Concurrency
10. JDBC
11. XML
12. DTD, XSD
13. AJAX
14. WSDL
15. SOAP
16. Security

### Study checklist

1. XHTML tags, documents
2. Frames
3. Forms
4. Submit and reset
5. Form actions
6. Posted XHTML codes
7. CSS
8. Posted CSS codes
9. JavaScript
10. Embedding JavaScript
11. Navigator, document, window objects
12. Form validation
13. Event-driven programming/execution

14. DOM -key interfaces
15. Referring to elements by ID, name, location
16. Applets
17. Embedding an applet into a web page
18. Applet security
19. Posted Javascript to Applet communication example
20. Posted Applet examples
21. HTTP operation
22. HTTP get vs. post
23. HTTP with images
24. TCP slow start problem
25. persistent connections
26. Stateless property of HTTP
27. User-server interaction via Cookies
28. Web usability
29. Usability tradeoffs discussed in class (e.g. why most corporate sites are fixed-width)
30. Servlet
31. Servlet methods
32. Client servlet interaction
33. Usage of servlet API objects and methods
34. Mechanisms for adding HTTP state
35. Session parameters
36. JSP
37. Web application directory structure
38. Deployment descriptor (web.xml)
39. Race conditions / interference
40. Mutual exclusion, critical sections
41. locks, monitors
42. Java synchronization
43. Double synchronization example
44. Producer/consumer example
45. Servlet synchronization
46. Scope of variables in web applications
47. Java API objects for Web Applications
48. JDBC connections, queries, prepared statements
49. connection pooling
50. transactions in JDBC
51. XML syntactic elements
52. XML validity vs. well formedness
53. DTD Grammar
54. library example
55. XSD schema, element, complexType, repeatable elements, attributes
56. SOAP, elements, request, response, error
57. Calculator example
58. WSDL elements
59. Relationship between WSDL elements and server-side Java class (Java2WSDL)

60. Web application architecture
61. AJAX request flow
62. XMLHttpRequest API usage
63. Asynchronous request
64. AddContent example (AJAX)
65. Main methods of a Java client generated by Axis
66. Examples of security attacks
67. Examples of security attacks preemption
68. Cryptography terms
69. Usage of computationally intractable problems for trap functions
70. Cypher block chaining
71. Public key schemes, encryption, authentication
72. Certificates
73. Certificate Authority
74. HTTPS
75. Login and logout example

**Not included on the exam**

1. Installation and configuration
2. Pointbase, Tomcat, Apache
3. HTTP formats
4. CGI, Perl
5. ASP, JPDA
6. Schema processors
7. IE AJAX
8. SQL gateway
9. RSA algorithm
10. SSL