PRINCE OF SONGKLA UNIVERSITY
FACULTY OF ENGINEERING
Department of Computer Engineering

Midterm Examination: Semester 1

Date: 29 July, 2009

Subject Code: 241-421 (240·322)

Subject Title: Client/Server Distributed Systems

Lecturers: Aj. Worraprot, Aj.Thammaratt

Academic Year: 2009

Time: 9:00-12:00 (3 hours)

Room: A400

Exam Duration: 3 hours

This paper has 7 pages.

Authorized Materials:

- Writing instruments (e.g. pens, pencils).
- Books (e.g. dictionaries) and calculators are **not** permitted.

Instructions to Students:

- Attempt all questions.
- Allow to answer in Thai language.

When writing programs, use good layout, and short comments; marks will not be deducted for minor syntax errors.

Student ID :_____ Name :_____Section : _____

Part I Answer the following questions.   (100 marks)

1. Explain Advantages and Disadvantages of Client/Server.

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2. Describe Advantages and Disadvantages of 3 tiered model compared to 2 tiered model.

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3. Distinguish between a "fat server" and a "fat client."

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4. Give an example of Distributed Programming.

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5. Describe file permission and give an example.

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6. Write the code to create file name "Data.dat" with permission 611. Use low level I/O.

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7. Describe the operation of fork() and draw a diagram of operation.

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8. Describe operation of these functions.

Bind() ....

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Listen()..

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Accept()...

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9. Describe the differences between TCP and UDP.

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10. Describe basic client-server operations. Draw a diagram to explain the operations.

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Part 2 Complete write 2 programs. (40 Marks)

1. Write a server program in TCP communication. Server waits for connection at port number 5555. When client is connected, it shows client information, address and port number, on server screen. Then, it sends message "Connection success then terminated." to the client. After sending the message, it closes the connection.

Example: The executed program gets the connection from the client located at the address 172.26.1.31 and port 21691. The result on server shown as follows:

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$ ./myserver

Connect from  172.26.1.31  port 21691
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2. Write a C program that forks a child. The parent then waits for the child to finish. The child gets 2 numbers from stdin (keyboard). It displays the sum of both numbers. Then, it terminates. After the child is terminated, the parent writes the message "Success Child Process." to stdout (screen). Use the low level I/O function to read/write.

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