

IV B.Tech. II Semester Regular Examinations, April/May -2006
CLIENT SERVER COMPUTING
(Information Technology)

Time: 3 hours

Max Marks: 80

Answer any FIVE Questions
All Questions carry equal marks

1. (a) What is Client/Server computing?
(b) Describe the characteristics of Client/Server systems. [4+12]
2. (a) What are the differences between client applications? How do you classify the clients based on these differences?
(b) Distinguish between GUIs (Graphical User Interfaces) and OOUIs (Object Oriented User Interfaces.) [8+8]
3. (a) What is the meaning of transparency?
(b) Discuss the different types of transparencies the NOS middleware is expected to provide as part of its “network disappearing act”. [4+12]
4. (a) Discuss the following approaches to electronic encryption:
 - i. The shared private key approach
 - ii. The public/private key approach.
(b) What are communications stacks? What do they provide? [10+6]
5. (a) Discuss the following SQL Database server Architectures from a Client/server perspective:
 - i. Process-per-client architectures
 - ii. Hybrid Architectures.
(b) Compare the performance of the various types of Database server Architectures. [10+6]
6. (a) What is an Executive Information system? Compare the database requirements of OLTP and decision support systems?
(b) List the benefits of Client/server oriented TP Monitors. [8+8]
7. (a) What is Groupware? How is Groupware different from SQL Databases?
(b) What are the functions provided by the combined Notes/Domino Client/Server application development and run-time environment? [6+10]
8. Write notes on the following:
 - (a) The Five Axes of Client/Server tools.
 - (b) TP-Lite and TP-Heavy approaches. [8+8]

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1. Explain how client/server models can be distinguished by the service they provide in detail. [16]
2. (a) What are the functions of a server program?
(b) Discuss in detail what base services the server programs expect from an operating system. [6+10]
3. (a) What does Replication transparency really mean?
(b) How do directories allow us to create unique names on the network? How are directories replicated?
(c) What is a Digital certificate? What does an X.509 certificate contain? [3+8+5]
4. (a) Explain with an example how RPC mechanism works.
(b) Compare the messaging and RPC architectures. [8+8]
5. (a) What are the functions of a Database server?
(b) Discuss the following SQL Database server Architectures from a client/server perspective:
 - i. Process-per-client architectures.
 - ii. Multithreaded architectures. [4+6+6]
6. (a) What is a Data ware house?
(b) Describe the elements of a Data ware housing system.
(c) What kind of transactional communications do TP Monitors provide?[2+10+4]
7. (a) How is Groupware different from TP Monitors?
(b) Discuss the five foundation technologies on which the groupware builds. [3+13]
8. Write notes on the following:
 - (a) Lotus Notes API
 - (b) OLAP client/server Interaction
 - (c) Benefits of JDBC 2-tier plus approach. [5+6+5]

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1. (a) What are 2-tier and 3-tier client/server systems? Give examples for both.
(b) Compare the 2-tier and 3-tier client/server systems. [4+12]
2. (a) Distinguish between symmetrical and Asymmetrical Multiprocessing.
(b) What are the three different client types?
(c) What does a client need from an operating system? [5+4+7]
3. (a) What does location transparency really mean?
(b) Discuss in detail how NOS provides the following types of transparencies:
 - i. Location transparency
 - ii. Name space transparency. [3+6+7]
4. (a) Discuss the public / private key approach to encryption.
(b) Distinguish between connection-oriented and connectionless protocols.
(c) Explain briefly how a secure VPN is created over the public internet. [6+5+5]
5. (a) What is an SQL server?
(b) Discuss the following SQL Database server Architectures from the client/server perspective.
 - i. Multithreaded architectures
 - ii. Hybrid architectures. [3+7+6]
6. (a) Discuss the following transaction models:
 - i. Flat transaction
 - ii. Distributed Flat transaction.
(b) What are the limitations of the Flat transaction? [8+8]
7. (a) Discuss briefly the following internet mail protocols:
 - i. POP3
 - ii. IMAP4
 - iii. SMTP
 - iv. S/MIME.
(b) Discuss the following types of client/server conferencing technologies:
 - i. Realtime conferences

ii. Anytime conferences. [12+4]

8. Write notes on the following:

(a) Domino Database Replication

(b) Microsoft's Exchange

(c) Rapid prototyping methodology. [6+6+4]

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1. (a) What are Fat servers and fat clients? Give examples for both.
(b) What are the benefits of designing the middle tier as a component-based application.
(c) When should we use 3-Tier model? [5+6+5]
2. Discuss in detail what extended services the server programs expect from an operating system. [16]
3. (a) What does Distributed time transparency really mean?
(b) How does NOS address the problem of distributed time?
(c) Discuss briefly the mechanisms NOSs provide for dealing with tampering and the confidentiality of in-transit data. [3+6+7]
4. Describe the following peer-to-peer communication protocols:
(a) Sockets
(b) Named pipes. [12+4]
5. (a) Discuss the advantages and disadvantages of the following SQL Database server Architectures:
 i. Process-per-client architectures
 ii. Multithreaded architectures
 iii. Hybrid architectures
(b) What is an OLTP system? What are the uses of OLTP systems? [12+4]
6. (a) What is a transaction? Discuss the ACID properties that make transactions desirable commodities in client/server computing.
(b) What are the functions of a TP Monitor? [10+6]
7. (a) How do you build a Notes Application?
(b) Explain the operations that can be performed using the Lotus Notes API.
(c) What kind of services does a Domino Mail Server provide? [5+5+6]
8. Write notes on the following:
(a) Model of Client/Server Tools.
(b) JDBC client/server Architecture models. [7+9]
