

Code No: 07A70505

R07

SET-1

B.Tech IV Year I Semester Examinations, December-2011
NETWORK PROGRAMMING
(Common to COMPUTER SCIENCE ENGINEERING, INFORMATION
TECHNOLOGY)

Time: 3 hours

Max. Marks: 80

Answer any five questions
All questions carry equal marks

- 1.a) Describe the OSI reference model and Unix Standards.
- b) Write briefly about the TCP and UDP connection establishment, format and Buffer sizes. [8+8]
2. Explain the IPv4 Socket Address Structure and IPv6 Socket Address Structure with suitable examples. [16]
3. Explain the following with suitable examples
 - a) Value –Result Arguments and Byte ordering functions
 - b) Byte Manipulation functions
 - c) Address conversion functions. [16]
- 4.a) Describe elementary TCP socket functions with an example.
- b) Write briefly POSIX Signal Handling and Termination of Server Process. [8+8]
5. What is I/O Multiplexing? Explain different types of Synchronous and asynchronous I/O models. [16]
6. Discuss the use of Generic Socket and IPv4 Socket options. Write briefly about getsockopt and setsockopt functions. [16]
- 7.a) Describe the UDP Echo server functions and lost datagram with an example.
- b) Write briefly about lack of flow control with UDP. List the differences between TCP and UDP. [16]
8. Write short notes on the following:
 - a) File and Record locking
 - b) Rlogin
 - c) DNS and RPC transparency. [16]

* * * * *

Code No: 07A70505

R07

SET-2

B.Tech IV Year I Semester Examinations, December-2011
NETWORK PROGRAMMING
(Common to COMPUTER SCIENCE ENGINEERING, INFORMATION
TECHNOLOGY)

Time: 3 hours**Max. Marks: 80**

Answer any five questions
All questions carry equal marks

1. Explain with a suitable diagram the socket system calls used for connection oriented and connection less communication between a client and a server. [16]
- 2.a) Explain with diagrams the following I/O models provided by Unix:
i) Blocking I/O model ii) Non blocking I/O model iii) signal driven I/O
b) Explain the functionality provided by select function. List the differences between Poll and Select functions. [8+8]
- 3.a) Compare the IPC functionality provided by pipes and message queues.
b) What is advisory locking? Explain file locking with semaphores. [8+8]
- 4.a) Write a sample to discuss the lack of flow control with UDP.
b) Write briefly about UDP echo server functions and lost data gram. [8+8]
5. Explain in detail the various issues needed to be considered to make the use of RPC transparent to the application. [16]
- 6.a) Explain how the signals are handled in Unix with suitable examples.
b) Consider the TCP Echo Server and TCP Echo Client application and discuss what happens to the client when the server process crashes. [8+8]
- 7.a) Explain the differences among the exec family of functions of Unix.
b) Discuss how the getaddr info function handles IPV6 addresses. [8+8]
8. Write notes on the following:
a) OSI model.
b) Types of Resources Records (entries in the DNS). [16]

* * * * *

Code No: 07A70505

R07

SET-3

B.Tech IV Year I Semester Examinations, December-2011
NETWORK PROGRAMMING
 (Common to COMPUTER SCIENCE ENGINEERING, INFORMATION
 TECHNOLOGY)

Time: 3 hours

Max. Marks: 80

Answer any five questions
All questions carry equal marks

- 1.a) Describe the syntax and purpose of the each of the following:
 i) Socket ii) Bind iii) Accept iv) Listen v) Connect
 b) Explain briefly the byte order and address conversion functions. [16]
- 2.a) Explain with a diagram signal driven I/O model.
 b) What are the differences in functionality between the poll and select functions? [8+8]
- 3.a) What are named and unnamed pipes? How are they created? Give an example.
 b) Explain in detail how the IPC functionality is provided by message queues. [8+8]
- 4.a) Explain with a diagram the steps that normally take place in a remote procedure call.
 b) Describe the getaddr info function as applicable to IPV6. Write briefly about IPV4 socket options. [8+8]
- 5.a) Explain with a sample code how a connected UDP socket can be used to determine the outgoing interface.
 b) Discuss the lack of flow control with UDP with a suitable example. [8+8]
- 6.a) What are signals? Describe the methods of handling SIGCHLD signals.
 b) What are the differences between concurrent servers and iterative servers? Give examples of services handled in iterative and concurrent fashions. [8+8]
- 7.a) Describe Terminal line disciplines, Terminal mode and rlogin with suitable examples.
 b) Discuss the uses of the following TCP Socket options:
 i) TCP_MAXSEG ii) TCP_NODELAY. [16]
8. Write notes on the following:
 a) DNS and gethost by name functions, Resolver options.
 b) Crashing and Rebooting of Server Host in TCP Client/Server application. [16]

* * * * *

Code No: 07A70505

R07

SET-4

B.Tech IV Year I Semester Examinations, December-2011
NETWORK PROGRAMMING
(Common to COMPUTER SCIENCE ENGINEERING, INFORMATION
TECHNOLOGY)

Time: 3 hours

Max. Marks: 80

Answer any five questions
All questions carry equal marks

- 1.a) Describe the TCP/IP reference model and Unix Standards.
- b) What are the limitations on the size of the IP datagram? Also explain how they affect the data transmitted by an application. [8+8]
- 2.a) Give the IPv4 socket address structure and explain the significance of each field.
- b) Explain how multiple clients are handled by a concurrent server. [8+8]
- 3.a) Briefly describe POSIX Signal Semantics. Write briefly about generic socket option.
- b) Explain what happens when the server host crashes? [8+8]
- 4.a) Explain the purpose and syntax of *select* system call. What conditions cause *select* to return “ready” for sockets?
- b) List the differences between *pselect* and *poll* functions. Write briefly about shutdown function. [8+8]
- 5.a) Write the function to echo lines on a datagram socket and explain.
- b) Discuss the effect of UDP not having any flow control. [8+8]
- 6.a) What are the four types of network-related information that an application might want to look up? Also mention the keyed lookup functions provided by them.
- b) Explain the role of a resolver with a neat diagram that depicts the typical arrangement of applications, resolvers and name servers. [8+8]
- 7.a) What is a pipe? How are FIFO’s different from Pipes? Explain with suitable example.
- b) Write a program to lock a file and record using semaphore. [8+8]
- 8.a) Show a picture of all the processes involved in the 4.3BSD remote login client and server side and explain.
- b) “4.3BSD considers a terminal device in one of three modes.” Explain them. [8+8]
