

Code No: N0521

**R07**

**Set No. 1**

**IV B.Tech. I Semester Regular Examinations, November, 2012**

**NETWORK PROGRAMMING**

**(Common to Computer Science & Engineering and Information Technology)**

**Time: 3 Hours**

**Max Marks: 80**

**Answer any FIVE Questions  
All Questions carry equal marks**

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- 1 a) Compare the services provided by TCP and UDP protocols.  
b) List out several standard services provided by TCP/IP. Give a brief summary of the protocol usage of various common internet applications
- 2 Explain about various elementary TCP socket functions.
- 3 What is I/O Multiplexing? Explain different types of Synchronous and asynchronous I/O models.
- 4 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.
- 5 Write short note on  
a) UDP echo server function  
b) TCP socket option
- 6 a) Explain about gethost by Name function with example.  
b) Role of resolver with neat diagram.
- 7 a) What is file locking? Explain different types of file locking?  
b) Briefly explain various methods of Inter process communication?
- 8 Explain in detail the various issues needed to be considered to make the use of RPC transparent to the application

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**Set No. 2**

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**Time: 3 Hours**

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- 1 a) Describe the OSI reference model and Unix Standards.  
b) What are the limitations on the size of the IP datagram? Also explain how they effect the data transmitted by an application.
- 2 Describe the syntax and purpose of the each of the following:  
i) Listen      ii) Connect      iii) fork      iv) excc
- 3 a) Explain with a neat diagram signal driven I/O model.  
b) What are the differences in functionality between the *poll* and *select* functions?
- 4 Describe the getaddr info function as applicable to IPV6. Write briefly about IPV4 socket options.
- 5 a) Write the function to echo lines on a datagram socket and explain  
b) Write briefly about lost data gram.
- 6 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.
- 7 What are pipes? Explain their limitations. Explain how pipes are created and used in IPC with examples.
- 8 a) Explain about pseudo – terminals and also terminal modes.  
b) Explain about 4.3BSD remote login client and server side with neat diagram

**Code No: N0521****R07****Set No. 3****IV B.Tech. I Semester Regular Examinations, November, 2012****NETWORK PROGRAMMING****(Common to Computer Science & Engineering and Information Technology)****Time: 3 Hours****Max Marks: 80****Answer any FIVE Questions****All Questions carry equal marks**

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- 1 a) Explain with a diagram how TCP establishes connections using a three-way handshake.  
b) Explain about Buffer sizes and limitations of TCP and UDP protocols.
- 2 Explain with diagrams how the socket address structures are passed from process to kernel and kernel to process
- 3 a) Explain the TCP Echo Server functions?  
b) Explain with diagrams the following I/O models provided by Unix:
  - i) I/O multiplexing model.
  - ii) Signal-Driven I/O model.
- 4 a) List the differences between pselect() and poll() functions. Write briefly about shutdown function.  
b) List the various socket options available for IPV6.
- 5 Write a program to echo message using UDP.
- 6 Explain about
  - a) DNS
  - b) uname function
- 7 a) What are the advantages of message queues? Explain the APIs for system V message queues.  
b) Write a program to lock a file and record using semaphore.
- 8 Write about the following
  - a) Terminal line discipline
  - b) r login

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**Set No. 4**

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**Time: 3 Hours**

**Max Marks: 80**

**Answer any FIVE Questions**

**All Questions carry equal marks**

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- 1 Describe the TCP/IP reference model and Unix Standards.
- 2 List the order in which the following functions should likely be called in a TCP server: accept (), bind(), close(), socket(), read(). Explain in detail each system call.
- 3 a) Explain briefly the byte order conversion functions.  
b) Write a sample code to describe the getsockopt () and setsockopt () functions.
- 4 a) Explain protocol independent socket options.  
b) Explain any two types of I/O models in UNIX?
- 5 a) Discuss the effect of UDP not having any flow control.  
b) Explain with a sample code how a connected UDP socket can be used to determine the outgoing interface
- 6 Explain the role of a resolver with a neat diagram that depicts the typical arrangement of applications, resolvers and name servers
- 7 a) What is a pipe? How FIFO is's different from Pipes? Explain with suitable example.  
b) Compare the IPC functionality provided by pipes and message queues.
- 8 Describe the Transparency issues of RPC with example.