Code No: A4003 **NR**

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD
M.Tech I Semester Examinations, October/November-2011
NETWORK PROGRAMMING
(INFORMATION TECHNOLOGY)

Time: 3hours **Max. Marks: 60**

Answer any five questions
All questions carry equal marks
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1.a) Why do sockets provide the interface from the upper three layers of the OSI model into the transport layer? (5m)
b) Identify the buffer sizes and limitations that affect the size of IP data grams and discuss their effect on data an application can transmit. (7m)

2.a) Discuss the IPv4 socket address structure. Identify the various address conversion functions and justify their need. (8m)
b) Draw a diagram that shows the calling sequence of socket system calls for connection oriented communication between a TCP Client and a TCP Server.(4m)

3.a) Explain with diagrams the following I/O Models:
i) Blocking I/O model
ii) Non-blocking I/O model. (7m)
b) Differentiate between a close function and shutdown function. (5m)

4.a) Explain with suitable examples how the named and unnamed pipes are created in Unix. What are the differences between them? (5m)
b) Write and explain the C program that allows cooperating processes to lock a resource for exclusive use using semaphores. (7m)

5.a) Draw a diagram that shows the calling sequence of socket system calls for connectionless communication between a UDP Client and a UDP Server. (4m)
b) With suitable codes, discuss the lack of flow control with UDP. (8m)

6.a) Discuss the basics of the DNS (ie. Resource Records, Resolvers and Name servers) that are needed for network programming. (8m)
b) Discuss the get host by name function along with syntax. (4m)

7.a) Discuss the various functions that can be done by a line discipline module. (5m)
b) Discuss the steps that normally take place in a remote procedure call. (7m)

8.a) What are signals? Explain briefly how the signals are handled in Unix? (6m)
b) Consider a simple Client/Server example (Simple echo Client/Server application) and discuss the following boundary condition for this example:
i) What happens if the server host is shutdown by an operator while a server process is running on that host? (6m)

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