

This question paper contains 3 printed pages.

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Your Roll No....

MCA / IV Sem.

J

Paper MCA - 404 - NETWORK PROGRAMMING
(Admissions of 2007 and onwards)

Time 3 hours

Maximum Marks 60

*(Write your Roll No on the top immediately
on receipt of this question paper)*

All questions are compulsory.

- 1 a) What is a concurrent server ? How is multi-threaded concurrent server better than multi-process concurrent server ? 05
- b) Suppose, you are having a corporate LAN where you are allotted only one Internet IP address but there are 100 Personal computers in your LAN What is the mechanism by which all computers of your LAN can access the Internet ? Explain. 05
- 2 a) What is telnet ? How is the I/O redirection done in the telnet ? 05
- b) You want to telnet from a computer running under the unix command line interface to a remote machine which is running under window's Graphical User Interface Is it feasible in telnet ? How? 05
- 3 a) Suppose, you have written a distributed computation program, where some of the functions you have used

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are available in the remote server. By what operating systems mechanism, your program will run? Explain

05

- b) You are having a LAN and you want to enforce the following :-
- (i) None of the computers in your LAN should access any of the notorious sites as decided by you
 - (ii) None of the computers of the notorious sites would access any of the computers of your LAN. How would you implement it? 05
- 4 a) Suppose, you are executing a program from your personal computer which is trying to read a file which is kept in the remote server. Is there any mechanism by which this is made feasible? Explain it briefly. 05
- b) What is Java virtual machine? How does Java virtual machine make programs portable across the Internet? 05
- 5 a) What are the purposes of the following address structures?
- (i) sock_addr,
 - (ii) sock_addr_in
- Define the above two address structures and explain the above 05
- b) Briefly explain the purpose of the following system calls in socket programming :- 05 x 1 = 05
- (i) inet_addr ()
 - (ii) htonl (INADDR_ANY)

- (iii) connect ()
 - (iv) bind ()
 - (v) fork ()
- 6 Write a connection - oriented, concurrent client and server program in C with the following specifications -
- (i) Client sends the authentication message with user_id and password to the server and the server replies the success or failure of authentication to the client
 - (ii) After successful authentication, client asks the server - "How many client requests you have so far processed?" and the server answers - "I have processed n number of clients till now", where n is the actual number of clients, the server has so far processed. 10