



Sl. No. of Ques. Paper : 7092
Unique Paper Code : 2341603
Name of Paper : Network Programming
Name of Course : B.Tech. (Computer Science) (Erstwhile FYUP)
Semester : VI
Duration : 3 hours
Maximum Marks : 75

F-6

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

Attempt all questions from Section A and any four questions from Section B.s

Section-A

(All Questions are compulsory)

- Q.1 (a) Differentiate between concurrent and iterative server? Describe the connection establishment in concurrent server with the help of an example. [5]
- (b) What do you understand by zombies? How are they handled using a signal handler? [1+4]
- (c) What are the conditions under which the socket is ready for: [2.5+2.5]
i) Reading
ii) Writing
- (d) Write the output of the following commands: [5]
i) netstat -i
ii) netstat -r
iii) netstat -rn
iv) netstat -a
v) ping
- (e) What is TIME_WAIT state? Explain the reasons for having this state? [1+4]
- (f) What is the limitation of close() function call? How do we overcome it? [3+2]
- (g) What is backlog parameter? In which function it is used? Explain its working using a diagram. [1+1+3]

Section -B

(Attempt any four questions from section B)

- Q.2. Implement TCP echo client and TCP concurrent echo server. After connecting, server prints the IP address and port no. of the client. [10]
- Q.3 (a) What is big-endian and little-endian byte ordering? Give the representation of 0x1020 in Big Endian and Little Endian format? [3+2]

P.T.O

(b) What is Nagle's algorithm? Briefly explain.

[5]

Q.4 Write short notes on:

[2.5 X 4]

i) traceroute

ii) SNMP

iii) packet sniffers

iv) DoS attacks

Q.5 (a) What are Resource Records? Discuss different types of Resource Records(RR) available in DNS?

[1+4]

(b) Explain the communication between an IPV4 Server and IPV6 client?

[5]

Q.6 (a) What is Connected UDP socket? How is it different from unconnected UDP socket?

[5]

(b) Differentiate between `inet_aton()` and `inet_addr()` functions?

[5]

Q.7. (a) Explain TCP's window scale and MSS options?

[5]

(b) What are the return values for `connect()` function? Explain the various possible error returns.

[2+3]