POKHARA UNIVERSITY

Level: Bachelor | Semester: Fall | Year : 2021
Programme: BE | Full Marks: 100
Course: Network Programming | Pass Marks: 45
Time : 3hrs.

Candidates are required to give their answers in their own words as far as practicable.

The figures in the margin indicate full marks.

Attempt all the questions.

1. a) Describe the application of Network Programming? Describe different states in TCP state transition diagram. 7
   b) Compare different communication protocols based on fragmentation, reliability, flow control and sequencing. 8

OR

Describe different internet layer protocols in detail.

2. a) Does getaddrinfo() is blocking or non-blocking? List out the different system call used to create TCP and UDP client server on the basis of blocking and non-blocking in nature. Also explain them in very short. 8
   b) What does it means fork() is called once but it returns twice? What are the major differences between wait () and waitpid()? Explain the possible option values that you can supply in waitpid() system call. 7

3. a) What is the use of byte ordering in network programming? Describe at least 5 byte manipulation functions with their uses. 7
   b) What is syslogd()? What is the technique for logging messages from a daemon process? Explain with sample code. 8

4. a) What will happened if you call bind() in tcp client program? Explain the situation with relevant example code where you can use send() and recv() in UDP socket and sendto() and recvfrom() in tcp socket. 7
   b) Give an outline of simple TCP server that can handle multiple clients using Berkeley Socket without doing fork() system call. Consider the scenario during data exchange in TCP socket, one site call close() function, what will happened to data in network? Is it still possible to send and receive data packet after calling close() function? What are the ways perform it? 8

5. a) What do you mean by static and dynamic link libraries? Describe different DLLs used in winsosk program. 7
   b) Differentiate winsock and unix (linux) socket implementation with the help of respective functions. 8

6. a) In which situations asynchronous IO is preferred than synchronous IO? Explain different Asynchronous IO functions in Winsock programming. 7
   b) Explain select() function in conjunction with accept() call in winsock. 8

7. Write short notes on: (**Any two**) 2×5
   a) Telnet and Remote Login
   b) Ping
   c) File descriptor and its importance