POKHARA UNIVERSITY

Level: Bachelor | Semester: Spring | Year : 2018
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) Compare TCP, UDP and SCTP. Explain 3-way and 4-way handshake for connection establishment and connection termination mechanisms with supporting diagrams. 9
   b) Explain TCP state transition diagram with suitable diagram. 6
2. a) What do you mean by socket descriptor? What are the different arguments /parameters for socket ( ) function call in Barkley socket API? 7
   b) What is byte ordering? Explain the following function:
      bzero(),bcmp(),bcopy(),inet_aton(),inet_addr(),inet_ntoa(), inet_pton() and inet_ntop(). 8
3. a) What is a connection queue? What are the possible circumstances that might cause connect () function to return an error? 8
   b) What is a concurrent server? Explain how fork ( ) identifies child and parent process with suitable code. 7
4. a) Compare Synchronous I/O Multiplexing with Nonblocking I/O mode. What are the different functions used to implement these I/O models in Berkeley socket API? 8
   b) Write a simple UDP server program using Berkeley socket API? 7
5. a) What are the major differences between, Berkeley socket API and Winsock API? 8
   b) Explain windows Socket Architecture with suitable diagram. 7
6. a) Explain different I/O handling modes in windows socket API? Which functions from Winsock API are used to provide each of these I/O handling modes? What parameters do they expect? 8
   b) Compare how error handling facility in implemented in Berkeley socket API and Windows Socket API? 7

7. Write short notes on (**Any Two**): 2×5
   a) Network Diagnostic Tools
   b) TFTP
   c) IP Packet Format