

04822 BACHELOR IN COMPUTER APPLICATIONS

Term-End Examination

June, 2011

CS-69 : TCP/IP PROGRAMMING

Time : 2 hours

Maximum Marks : 60

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*Note : Question number one is compulsory. Answer any three questions from the rest.*

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1. (a) What are the reserved bit patterns of the first bytes for class A and class B respectively. 2
- (b) In a class A subnet, the IP address of one of the hosts and the mask are as given below : 2
- IP address : 17. 34. 12. 57
- Mask : 255. 255. 224. 0
- (c) What is the subnet address ? How many octets are there in Ethernet hardware address ? 2
- (d) Explain the process of TCP correction termination through illustration. 6

- (e) Write a client and a server program in C- language to establish a TCP connection between a client and a server. Once a connection is established, the client program sends a string to the server. The server checks whether the string is a palindrome or not and send the reply to the client as YES or NO. Also, explain the logic of a program. 8
- (f) Write the syntax and purpose of the following unix commands. 5
- (i) Head
  - (ii) Who
  - (iii) Ping
  - (iv) IP config
  - (v) Hostname
- (g) What is ARP ? Explain its functionality. How does it differ from RARP. 5
2. Differentiate between the followings : 10
- (a) Class B and Class C address
  - (b) Hubs and switches
  - (c) Unicast and broadcast method of message transmission.
  - (d) Stateful and stateless programs

3. (a) How is FTP different from other application layer protocols ? List and explain at least three attributes to be specified prior to data transfer using FTP. 4
- (b) Write the syntax and meaning of two functions, one which converts data from the host format to the network format and the second from the network format to the data format respectively. 6
4. Explain the purpose and importance of the following IP and TCP header fields. 10
- (a) Header checksum
- (b) Type of service
- (c) Sequence number
- (d) Urgent pointer
- (e) Padding
5. (a) Explain the following terms and meaning and syntax of system call. 6
- (i) Socket descriptor
- (ii) Passive socket
- (iii) inet ( )
- (b) What is the purpose of MIME protocol ? Explain. 4