

**BACHELOR OF COMPUTER APPLICATIONS
(BCA) (Pre-Revised)**

Term-End Examination

December, 2015

CS-69 : TCP/IP PROGRAMMING

Time : 2 hours

Maximum Marks : 60

Note : *Question number 1 is compulsory. Answer any three questions from the rest.*

1. (a) How are netid and hostid distributed in Classes A, B and C IP addresses ? 3
- (b) Explain the concept of IP subnet addressing and subnet masking with the help of an example for each. 4
- (c) Explain the concept of byte-ordering used in network programming with an example. 4
- (d) How does TCP handle flow control problem ? Explain it with the help of an example showing the status of sliding window at different stages of flow. 5

- (e) What are the differences between TCP and UDP ? 6
- (f) Write a client and a server program in C-language using UNIX socket programming. The client sends a string to a server. The server reverses the string and sends the result to the client. 8
2. (a) Differentiate between the following : 6
- (i) Unicast, Multicast and Broadcast
 - (ii) ARP and RARP
 - (iii) POP and IMAP Protocols
- (b) Explain the meaning of the following system calls : 4
- (i) read()
 - (ii) recv()
 - (iii) inet()
 - (iv) close()
3. Explain the purpose and importance of the following IP and TCP header fields : 10
- (a) Sequence Number
 - (b) HLEN
 - (c) Flags
 - (d) Acknowledgement Number
 - (e) Fragment Offset

4. (a) User `aaa@xxx.com` sends an e-mail message to user `bbb@xxx.com`. Write all the steps followed in transferring an e-mail using SMTP. 6
- (b) Write the purpose of the following Unix commands : 4
- (i) Ping
 - (ii) Hostname
 - (iii) Who
 - (iv) IPconfig
5. (a) Briefly discuss Distance-Vector Routing Protocol. 5
- (b) What is DNS? Write down its characteristics. 5
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