

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

**Term-End Examination**

**December, 2015**

**CS-69 : TCP/IP PROGRAMMING**

*Time : 2 hours*

*Maximum Marks : 60*

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

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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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