

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

Term-End Examination

03783

June, 2015

**BCS-052 : NETWORK PROGRAMMING AND
ADMINISTRATION**

Time : 3 hours

Maximum Marks : 100

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

1. (a) Do port addresses at transport layer need to be unique ? Why or why not ? Why are port addresses shorter than IP addresses ? 5
- (b) What is ARP ? How does it differ from RARP and BOOTP ? Explain. 5
- (c) Which field in IP header is used for congestion control and how ? Explain. 5
- (d) Draw the block diagram of DNS. Explain the purpose of various fields used in DNS message format. 7
- (e) In electronic mail, what is MIME ? Explain its purpose and functionality. 5

- (f) How is checksum in TCP header computed ? Give an example to explain it. 5
- (g) Why is layering of the protocols done in TCP/IP stack ? 3
- (h) Differentiate between FAT 16 and FAT 32. 5
2. (a) Explain the purpose and importance of the following header fields of TCP and IP protocols : 10
- (i) Protocol
 - (ii) Sequence Number
 - (iii) Version
 - (iv) Type of Service
- (b) What is the purpose of byte ordering in network communication ? Also, write the functions used for byte ordering. 10
3. Write an algorithm each for UDP client and UDP server with the following specifications : 20
- Client should prompt a user to enter two numbers.
 - Client program will send these numbers to the server.
 - Server program will be able to handle many clients concurrently.
 - Once server program receives the numbers, it will find the largest number and send it back to the respective client.

4. (a) What is the size of TCP header ? How many packets are exchanged in setting up a TCP connection ? 6
- (b) Identify the class of the following IP addresses : 4
- (i) 2.200.100.100
 - (ii) 130.10.120.240
 - (iii) 196.10.10.2
 - (iv) 208.10.18.203
- (c) Write the syntax along with the parameters used by the following system calls : 10
- (i) accept ()
 - (ii) listen ()
 - (iii) send ()
 - (iv) shutdown ()
5. Write short notes on the following : 4×5=20
- (a) Network Monitoring Tools
 - (b) FreeNX
 - (c) Cloud Computing
 - (d) Name Servers
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