

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

**Term-End Examination
December, 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) Assume a subnet mask 255.255.0.0 is assigned to an address of Class B. How many hosts are possible per subnet and how many subnets are possible ? 5
- (b) How does TCP handle out-of-order segment ? Explain the procedure with a suitable diagram. 8
- (c) The size of the option field of an IP datagram is 20 bytes. What is the value of HLEN field ? 2
- (d) Explain the Distance vector routing algorithm with an example. 10

- (e) Explain the working of ARP and RARP using suitable diagram for each. 8
- (f) What is the importance of ICMP at Network layer ? Explain the reports generated by ICMP. 7
2. Write an algorithm (using Socket Programming System Calls) for TCP client and TCP server each, as per the following specifications :
(Make suitable assumptions, if any) 20
- (a) Client will start communication and establish connection. It will send a list of numbers to the TCP server.
- (b) TCP server, which can handle maximum 3 clients concurrently, will accept the list and send back the smallest number. Server will terminate this connection once the number is sent.
3. (a) How does a DNS server work ? Explain with help of a suitable example for recursive and iterative solutions. 10
- (b) What is SNMP ? Explain the different security levels implemented in SNMP. 10
4. (a) What are the different remote network administration tools ? Explain the features of each. 10
- (b) Discuss the activities between DHCP server and DHCP client. 10

5. Differentiate between the following :

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- (a) htons() and ntohs() System Call
 - (b) Supernet and Subnet
 - (c) read() and write() System Call
 - (d) Broadcasting and Multicasting
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