BACHELOR OF COMPUTER

APPLICATIONS (BCA)

Term-End Examination

December, 2020

BCS-052 : NETWORK PROGRAMMING AND ADMINISTRATION

Time : 3 Hours   *Maximum Marks : 100*

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

1. (a) What is the maximum capacity of datagram that can be carried by Internet protocol ? Also, explain, how IP datagrams are discarded from the network.   5

   (b) The following is the TCP header in hexadecimal format :   10

04321017   01231311   00000234 62324216
00134217

(i)   What is the destination port number ?

(ii) What is the sequence number ?

(iii) What is the source port number ?

(iv) What is the length of TCP header ?

(v)   What is the acknowledgement
      number ?

(c) What is ICMP ? Explain the functions of
     ICMP.   5

(d) Which field of IP header is used for
     selecting type of service ? Explain.   5

(e) Why and how is broadcasting used in
     ARP ?   5

(f) Write any *five* disk management functions
     in the context of Disk Security
     Management.   5

(g) How the "Disk usage" is checked in Linux ?
     Explain with an example.   5

2. (a) Compare and contrast TCP/IP and OSI model. Also, draw the layer diagram for each model. 10

(b) What is meant by byte-ordering ? For what purpose the following socket calls are used ? Explain using an example for each : 10

(i) htons( )

(ii) htonl( )

(iii) ntohs( )

(iv) ntohl( )

3. (a) Explain the purpose of the following fields of the TCP and IP : 10

(i) Urgent Pointer

(ii) Window size

(iii) Sequence number

(iv) Fragment offset

(b) Explain the distance vector routing algorithm with an example. 10

4. (a) What is a Socket ? Explain the structure of a socket with the help of a diagram. List and explain different types of sockets.   10

   (b) What are the different remote network administration tools ? Explain the features of each.   10

5. Differentiate between the following :   5×4=20

   (a) Supernet and Subnet

   (b) Broadcasting and Multicasting

   (c) read( ) and write( ) system calls

   (d) UDP and TCP

   (e) Switches and Hubs