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BCS-061

BACHELOR OF COMPUTER APPLICATIONS (BCA) (Revised)

01261 **Term-End Examination**

June, 2017

BCS-061 : TCP/IP PROGRAMMING

Time : 2 hours *Maximum Marks : 60*

Note : *Question no. 1 is* ***compulsory****. Answer any* ***three*** *questions from the rest.*

1. (a) Explain how the broadcasting technique is used in Address Resolution Protocol. *4*

(b) Why does an IP datagram have a variable size header ? Explain how an IP datagram hits to its death. *4*

(c) What is ICMP ? Explain the network information it carries. *5*

(d) Assume the following figure as a TCP header in hexadecimal format :

04216510 11003400 00007140 500207FF 00000000

On the basis of the given header, answer the following : 9

(i) What is the source port number ?

(ii) What is the destination port number ?

(iii) What is the sequence number ?

(iv) What is the acknowledgement number ?

(v) What is the length of the header ?

(vi) What is the window size ?

(e) Explain the significance of various yields used in the DNS message format. 5

(f) Identify the class of the following IP addresses : 3

(i) 246.1.5.6

(ii) 140.3.4.19

(iii) 10.10.10.10

2. (a) Write the similarities between UDP socket, Raw socket and TCP socket. 6

(b) Write the syntax of byte-ordering functions. 4

3. (a) What is 'out-of-order' segment situation in TCP ? Explain the mechanism used by TCP to handle this situation. 5

(b) Explain the uses of TELNET. Also, discuss the communication model used in TELNET. 5

4. Write the concurrent server and client program in C language which uses TCP. The program should address the following specifications : *10*

- This server program can handle maximum 05 clients concurrently.
- The server program will send the sum of two numbers to the respective clients whenever the server receives any two numbers from those clients.

5. Write short notes on the following : *10*

(a) DHCP

(b) Voice Over IP

(c) Static and Dynamic Routing

(d) Multicasting and Broadcasting