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BCS-061

BACHELOR OF COMPUTER APPLICATIONS (BCA) (Revised)

Term-End Examination

00490

December, 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.*

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1. (a) An IP datagram has arrived with the following first 16 bits of information in the header (in binary form) as given below :

1 0 1 0 1 1 0 1 1 0 0 1 1 0 1 1 × × × ...

16 bits

Answer the following : *6*

(i) Calculate the size of header.

(ii) Is there any option field ?

(iii) What is the precedence of the datagram ?

(iv) What type of service does this datagram contain ?

(b) Explain, how multiplexing is handled by transport layer in TCP/IP model. 5

(c) What is IP subnetting and masking ? Explain, using an example. 4

(d) Discuss the methods used by TCP for congestion control and flow control. 6

(e) Explain the methods used by HTTP for data transfer using an example for each. 6

(f) Discuss the importance and use of a proxy server. 3

2. (a) It is a fact that :

"Internet protocol is an unreliable, best effort, connectionless protocol."

(i) Why is it unreliable ? Explain.

(ii) What is the purpose of making this protocol a connectionless protocol ?

(iii) What makes it best-effort ? 6

(b) How do the services get mapped to the corresponding port numbers ? Explain, using an example. 4

3. (a) Write a UDP echo client and UDP server program using C language. 8

(b) Differentiate between *getsocket()* and *setsocket()* system calls. 2

4. (a) List and explain the use of TCP/IP protocols available at each layer of TCP/IP (*except* application layer). *6*

(b) Differentiate between Iterative and Concurrent servers. *4*

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

(a) Byte Ordering

(b) ARP

(c) Gateway

(d) Distance Vector Routing