No. of Printed Pages : 3

CS-69

BACHELOR OF COMPUTER APPLICATIONS (BCA) (Pre-Revised)

00545

Term-End Examination

December, 2016

CS-69 : TCP/IP PROGRAMMING

Time : 2 hours *Maximum Marks : 60*

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

1. (a) Assume an IP address 220.34.38.0. Find the class, the block and the range of addresses. *3*

(b) Given the IP address and the mask of a class as :

IP address : 135.134.112.66

Mask : 255.255.244.0

What is the subnet address ? *4*

(c) How does TCP manage lost acknowledgements and duplicate segments ? *4*

(d) What are the drawbacks of distance vector routing protocol ? *3*

(e) Differentiate between TCP/IP model and OSI reference model. *5*

(f) Write a client-server algorithm to establish a TCP-connection between a client and a server. Once a connection is established, the client program sends a string to the server. The server checks whether the string is a palindrome or not and sends the reply to the client as Yes or No. Also explain the logic of the program. *7*

(g) What is the need of RARP ? How does it work ? *4*

2. (a) Describe the architecture of the Internet. *3*

(b) Explain the meaning of the following fields in an IP datagram, with examples : *4*

(i) Time to Live (TTL)

(ii) Fragment Offsets

(c) What is a socket ? Write the difference between an active and a passive socket. *3*

3. (a) Differentiate between classful and classless addressing with the help of examples. *5*

(b) Differentiate between stateful and stateless programs. *3*

(c) What is the purpose of the following system calls ? *2*

(i) bind()

(ii) accept()

4. (a) Illustrate the process of connection establishment in TCP. *4*

(b) Explain the purpose of the following TCP header fields : *3*

(i) Window

(ii) Urgent pointer

(c) What is the need of a POP server in the transfer of an e-mail ? *3*

5. (a) How does a DNS server work ? *5*

(b) Specify all elements of a URL with the help of an example. *2*

(c) How does FTP differ from other application layer protocols ? *3*