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BCS-041

BACHELOR OF COMPUTER APPLICATIONS (BCA) (Revised)

Term-End Examination

December, 2015

BCS-041 : FUNDAMENTALS OF COMPUTER NETWORKS

Time : 3 hours *Maximum Marks : 100*

Note : *Question no. **1** is **compulsory**. Attempt any **three** questions from the rest. Use of calculator is allowed.*

1. (a) What is count to infinity problem in distance vector routing protocol ? How does it happen ? Explain with an example. *10*

(b) Explain the advantages of Frame Relay over X·25 network. *5*

(c) How are switches and hubs different ? List at least four differences. *5*

(d) What is the role of parallel and serial transmission devices in computer networking ? Explain. *5*

(e) Differentiate between frequency shift keying and phase shift keying. *5*

(f) What is subnetting ? What is the subnetwork address, if the destination address is 200.45.34.56 and the subnet mask is 255.255.240.0 ? 5

(g) Compare and contrast between private key and public key cryptography. 5

2. (a) Explain the concept of Go-Back-N sliding window protocol with a suitable example. 10

(b) Calculate CRC, if the message is 110101001 and the generator is 1011. 10

3. (a) Assume two primary numbers p = 7 and q = 19, use RSA algorithm to show the encryption and decryption with a message "6". 10

(b) Explain the functions of various connecting devices in a LAN. 10

4. (a) What is fragmentation ? Explain why IPv4 and IPv6 protocol need to fragment some packets. 10

(b) How is connection established and terminated in TCP using three-way handshaking mechanism ? Explain. 10

5. Write short notes on the following : *4×5=20*

(a) ALOHA Protocols

(b) SNMP

(c) MD5

(d) Wireless Generations (1G, 2G and 3G)