| BCS-041 |

BCA (REVISED)

Term-End Examination

December, 2013

BCS-041 : FUNDAMENTAL OF COMPUTER NETWORKS

Time : 3 hours   Maximum Marks : 100

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

1. (a) What is the need of modulation ? Differentiate between analog and frequency modulation.   5

    (b) Compare and contrast between Synchronous and Asynchronous transmission using an example for each.   5

    (c) What is frequency division multiplexing ? Write its advantages and disadvantages.   5

    (d) What are the different considerations while choosing a topology for a network ?   4

    (e) Why network models are divided into layers ? Write the similarities between TCP/IP and OSI model.   5

    (f) Explain the working of ARP and RARP.   6

    (g) What are gateways ? Explain the importance of gateways in networking.   5

    (h) What is cell sectoring in wireless networking ? State its type.   5

2. (a) Assume message M = 1010101010 bits and generator G = 10001 bits. Explain, how CRC is used for error detection using above message bits and generator bits. **10**

   (b) Explain the working of link state routing algorithm using an example. **10**

3. (a) Discuss the functions performed by SNMP for network management. **10**

   (b) Write the working of Selective Repeat method. Also, compare it with GO-Back -N using example. **10**

4. (a) Write an advantages and one disadvantages of the following : **10**
   (i)   Hub   (ii) Bridge
   (iii) Repeater   (iv) Modem
   (v)   Switch

   (b) Write the steps of RSA algorithm. Assume two primary numbers p = 3 and q = 11, use RSA algorithm to calculate encryption and decryption keys. **10**

5. Write a short notes on the following : **20**
   (a) Code Division Multiplexing
   (b) Frame Relay
   (c) Slotted ALOHA
   (d) Multi - mode fiber optics