

MCA (Revised)
Term-End Examination
June, 2008

**MCS-042 : DATA COMMUNICATION AND
COMPUTER NETWORKS**

Time : 3 hours

Maximum Marks : 100

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

1. (a) How does PCM work ? Explain through a diagram.
What are its drawbacks ? 10
- (b) How are problems of Hidden Station and Exposed
Station resolved in wireless LAN ? Explain in detail. 10
- (c) Explain the 3-way handshake method. How is it
different from 2-way handshake method ? 10
- (d) Give any two reasons for PGP compressing
messages. 5
- (e) Briefly explain flags in TCP Header. 5
2. (a) Explain the format of an Ethernet frame. 5
- (b) Explain the binary exponential back off algorithm. 5
- (c) Describe Nyquist and Shannon's theorem with the
help of examples. 10

3. (a) Explain Stop and Wait ARQ. What can be the problem with this protocol ? How does goback N resolve this problem ? 10
- (b) How does BGP work ? How does it solve the Count to Infinity problem ? 10
4. (a) Explain IPv6 header fields. 10
- (b) Draw the general outline and details of one iteration of DES and explain its operation. 10
5. (a) Explain the Leaky Bucket algorithm. 10
- (b) Explain Bellman-Ford's shortest path algorithm. 10