

**MCA (Revised)**  
**Term-End Examination**  
**June, 2012**

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

*Time : 3 hours*

*Maximum Marks : 100*

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

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1. (a) Obtain throughput for Aloha and slotted Aloha Protocol and explain. 10
- (b) What is the need of multiplexing ? Explain FDM and TDM with the help of suitable diagram. 5
- (c) How does 802.11 deal with the problem of noisy channel ? Explain. 10
- (d) Define pipelining. Explain it in Go Back N and Selective repeat with help of appropriate diagram. 5
- (e) Draw the Manchester and differentiate Manchester encoding for the following bitstream. 5  
11110000
- (f) Why 5 packet fragmentation needed in IP ? Explain. 5

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| 2. | (a) | Explain the problems of hidden static in exposed static in a wireless LAN with illustration.   | 10    |
|    | (b) | Differentiate between subnet and classless addressing.   | 5     |
|    | (c) | Explain the main objectives of the upward multiplexing and explain how it relates to the performance of a network.   | 5     |
| 3. | (a) | What is silly wisdom syndrome ? What is Clark's solution for it ?  | 7     |
|    | (b) | Differentiate between optical fibre and copper wire.   | 6     |
|    | (c) | Explain the operation of Diffie - Hellman method through an example.   | 7     |
| 4. | (a) | Explain the operation of congestion control algorithm in TCP.  | 7     |
|    | (b) | What is the reason for minimum frame length in IEEE802-3 ?   | 6     |
|    | (c) | Define Digital Signature and explain its benefits.   | 7     |
| 5. | (a) | Explain the operation of Reverse path forwarding algorithm. What is the purpose of the algorithm ?   | 5     |
|    | (b) | What do you understand by traffic shaping ? How is it implemented through leaky bucket traffic shaper and token bucket traffic shaper ? Show it through Illustrations. | 5+5+5 |