Name : .....

Roll No. : .....

Invigilator's Signature : .....

CS/M.Tech (ECE)/SEM-1/MCE-105A/2011-12

2011
COMPUTER COMMUNICATION & NETWORKING

Time Allotted : 3 Hours *Full Marks* : 70

The figures in the margin indicate full marks.
Candidates are required to give their answers in their own words as far as practicable.

Answer any *five* questions of the following

1. a) Explain the utility of layered network architecture. Compare ISO-OSI and TCP/IP models.

   b) Differentiate circuit switching and packet switching.

   10 + 4

2. a) Find the expression for average delay and throughput for both pure ALOHA and slotted ALOHA. Compare their performances as well.

   b) Explain how collision detection is handled in CSMA/CD.

   8 + 6

3. a) What do you mean by non adaptive routing algorithm and adaptive routing algorithm ? Briefly discuss shortest path routing algorithm with the help of an example.

b) What do you mean by flooding, flow based routing, broadcast routing and multicast routing ? Name a few dynamic routing algorithms. 7 + 7

4. a) What is IP addressing ? What are the different classes of IP addressing ? What is the difference between static and dynamic IPs ?

b) Compare IP Addressing and MAC addressing. 10 + 4

5. a) What are the different types of encryption techniques ?

b) What do you mean by Asymmetric Key Cryptography ?

c) Briefly describe RSA algorithm. 3 + 3 + 8

6. a) What is congestion ? Why does congestion occur ? Explain Leaky Bucket algorithm for congestion control.

b) In Selective Repeat ARQ, the size of the sender window must be at most 2/2. Explain it. 8 + 6

7. Write short notes on any *two* of the following 7 + 7

a) Internet Security

b) DNS

c) SNMP

d) Sliding Window protocls.