ROLL NO. _____

ALCCS – OLD SCHEME

Code: CS32 **Subject: COMPUTER NETWORKS**
Time: 3 Hours **Max. Marks: 100**

AUGUST 2011

NOTE:

- **Please write your Roll No. at the space provided on each page immediately after receiving the Question Paper.**
- **Question 1 is compulsory and carries 28 marks. Answer any FOUR questions from the rest. Marks are indicated against each question.**
- **Parts of a question should be answered at the same place.**

Q.1 a. What are the various types of networks? Describe briefly.

b. What kind of conversion is done by Amplitude Shift Keying? Explain Binary Amplitude shift Keying.

c. Explain Stop and wait protocol for noiseless channels.

d. What is Controlled Access? Give the functioning of Polling.

e. Write a brief note on Embedded Markov chains.

f. What is Little's formula? Prove it.

g. What is Cryptography? Explain Public and Private Keys to be used for Cryptography mechanism. **(7 × 4)**

Q.2 a. During the communication, how various layers of OSI model exchange information to establish a connection? Describe with the help of a suitable diagram.

b. What type of errors can be detected by Parity Check Code? How is it implemented? Explain with a suitable example. **(9+9)**

Q.3 a. What is ATM Technology? Explain reference model of ATM along with the various services provided by it.

b. Define the type of the following destination addresses:
(i) 4A:30:10:21:10:1A
(ii) 47:20:1B:2E:08:EE
(iii) FF:FF:FF:FF:FF:FF **(9+9)**

Q.4 a. What is congestion control and how it is implemented in Network Layer? What is the role of Choke packet in managing congestion? **(9)**

b. What are the various connecting devices used in networking? Explain design and functioning of Bridges. **(9)**

Q.5 a. An ISP is granted a block of addresses starting with 190.100.0.0/16 (65,536 addresses). The ISP needs to distribute these addresses to three groups of customers as follows:
(i) The first group has 64 customers; each needs 256 addresses.
(ii) The second group has 128 customers; each needs 128 addresses.
(iii) The third group has 128 customers; each needs 64 addresses.
Design the sub blocks and find out how many addresses are still available after these allocations. **(9)**

b. What is Border Gateway Protocol (BGP)? Explain the functioning of BGP. **(9)**

Q.6 a. How Connection is established and Terminated in TCP using Three way handshaking mechanism? Describe in detail. **(9)**

b. How flow control is managed in TCP? Explain briefly. **(9)**

Q.7 a. What is Electronic mail? Explain the two scenarios of architecture of E-Mail. **(9)**

b. What is Data Compression? Consider a message: "codes_are_cool", determine the Huffman coding for this message. **(9)**