Reg. No.										

MANIPAL UNIVERSITY

FIRST / THIRD SEMESTER MSc. INFORMATION SCIENCE DEGREE EXAMINATION – NOVEMBER 2015

SUBJECT: MIS 509 / CIS 655 – COMPUTER NETWORKS

Monday, November 23, 2015

Time: 10:00 – 13:00 Hrs. Max. Marks: 100

1. Write the classification of networks based on their transmission technology. Explain them briefly.

(10 marks)

2. Give the layer structure of OSI model. With neat diagram describe the responsibilities of network layer and transport layer in OSI reference model.

(10 marks)

3. What are switches? Explain about the various switching modes and LAN switch configurations.

(10 marks)

4. How many class B networks can exist? How many hosts can a network in this class have? Draw an example diagram to show class B blocks. Explain the same.

(10 marks)

5A. Write a short note on "Multihomed Devices".
5B. Explain supernetting and supernetting mask with suitable example.

(5+5 = 10 marks)

6. A company has three offices: B1, B2 and B3. The B1 office is connected to the B2 and B3 offices via private, point-to-point WAN lines. The company is granted a block of 64 addresses with the beginning address 70.12.100.128/26. The management has decided to allocate 32 addresses for the B1 office and divides the rest of addresses between the two offices. Show the configuration designed for the management and lists the sub-blocks allocated for each network.

(10 marks)

7. How hierarchical routing reduce the routing table contents? Explain with suitable example.

(10 marks)

8. Describe the various congestion prevention techniques used in the routers and hosts.

(10 marks)

9. What are the services offered by TCP to the processes at the application layer? Describe them in detail.

(10 marks)

10A. How does TCP handle data segment transmitted from client to server by setting PUSH flag?
10B. When TCP set URGENT flag and explain how it useful in data transmission?

(5+5 = 10 marks)