

# Question Paper



## MANIPAL UNIVERSITY

**SCHOOL OF INFORMATION SCIENCES**  
**FIRST SEMESTER Master of Engineering - ME ( Medical Software )**  
**DEGREE EXAMINATION - NOVEMBER 2017**  
**DATE : Saturday, November 18, 2017**  
**TIME : 10:00AM - 1:00PM**  
**Computer Networks [MMS 609]**

**Marks: 100**

**Duration: 180 mins.**

### **Answer all the questions.**

- 1) Write a brief note on the OSI reference model explaining the functionalities of each layer. (10)
- 2) Briefly explain the ethernet datagram frame with an example. (10)
- 3) Write a short note on Gateways and Switches. (10)
- 4) Write short notes on different basic network topologies with suitable diagram. (10)
- 5) 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 170.120.10.128/26. 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 list the sub-blocks allocated for each network. (10)
- 6) Write a short note on Delivery of packets with respect to IP routing in computer networks? (10)
- 7) What is count-to-infinity problem? In which routing algorithm this problem exists? Give possible solutions. (10)  
(2+2+6)
- 8) Explain the following congestion reactive techniques in Virtual-Circuit subnet: (10)
  - a. Admission Control
  - b. Load Shedding ( 5+5 )
- 9) Explain the operations of UDP at the transport layer. (10)
- 10) When does TCP employ half-close method to terminate (10)

connection? Explain half-close connection termination process with suitable diagram.

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