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06EC71

**Seventh Semester B.E. Degree Examination, December 2012**  
**Computer Communication Networks**

Time: 3 hrs.

Max. Marks:100

**Note: Answer FIVE full questions, selecting  
at least TWO questions from each part.**

**PART – A**

- 1 a. Describe the ISO OSI reference model of a computer Network. Discuss the function of each layer. (10 Marks)
- b. Describe the SS7 service and its relation to the telephone network. (05 Marks)
- c. Distinguish between a DSL modem and a DSLAM. (05 Marks)
- 2 a. Differentiate between character stuffing and bit stuffing with examples. (05 Marks)
- b. Explain different HDLC frames. (05 Marks)
- c. What are sliding window protocols? Explain Go-Back-N protocol for Noisy channel. (10 Marks)
- 3 a. Compare pure ALOHA with slotted ALOHA. What are the reasons for poor channel utilization in ALOHA systems? How the same is improved in CSMA. (08 Marks)
- b. Discuss the concepts of  
i) 1 – persistent CSMA      ii) Non-persistent CSMA. (06 Marks)
- c. Explain the working of CSMA/CD. Suppose a point to point link is set up between earth and a rover on MARS. The distance from earth to mars is approximately 55 Gm and data travels over the link at a speed of light  $3 \times 10^8$  m/s. calculate the minimum round trip propagation time. (06 Marks)
- 4 a. Compare the data rates for standard Ethernet, fast Ethernet, Gigabit Ethernet and Ten Gigabit Ethernet. (04 Marks)
- b. What is the difference between a unicast, multicast, and broad cast address? 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 (08 Marks)
- c. Explain the following with respect to FAST Ethernet:  
i) Implementation    ii) Encoding    iii) 100 BASE-TX    iv) 100 BASE-FX. (08 Marks)

**PART – B**

- 5 a. Explain the following connecting devices:  
i) Repeater    ii) Bridge    iii) Router    iv) Gateway. (08 Marks)
- b. What is spanning tree? Explain with suitable example. (08 Marks)
- c. What is VLAN? Explain. (04 Marks)

- 6** a. Explain the address formats for IPV4 and IPV6 address? **(08 Marks)**  
b. List the classes in classful addressing and define the application of each class. **(08 Marks)**  
c. What is NAT? How can NAT help in address depletion? **(04 Marks)**
- 7** a. What is the difference between a direct and an indirect delivery? **(04 Marks)**  
b. List and explain three forwarding techniques. **(08 Marks)**  
c. Explain dynamic routing table. **(08 Marks)**
- 8** a. Compare the TCP header and the UDP header. List the fields in the TCP header that are missing from UDP header. Give the reason for their absence. **(08 Marks)**  
b. What are the three domains of domain name space? Explain. **(08 Marks)**  
c. How does recursion resolution differ from iterative resolution? **(04 Marks)**

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