

B.E DEGREE END SEMESTER EXAM, APRIL/MAY 2011
ELECTRONICS & COMMUNICATION ENGINEERING BRANCH

Sixth Semester – (Regulations 2008)

EC 9353 – COMMUNICATION NETWORKS

Time : 3 Hr.

Max. Mark : 100

Answer ALL Questions

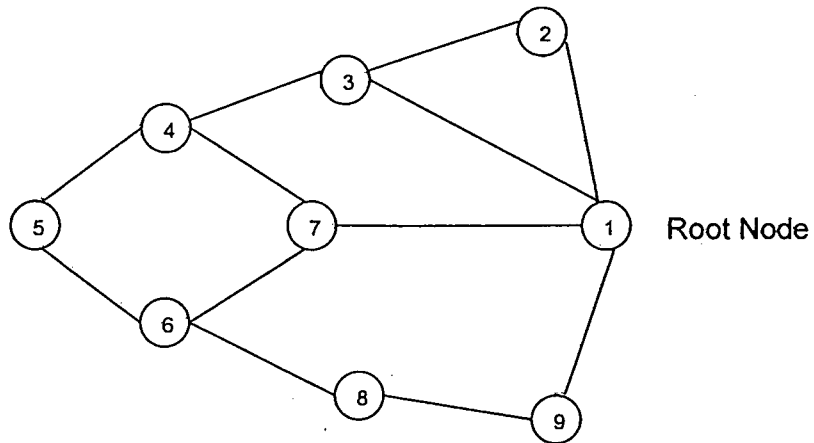
Part – A (10 x 2 = 20 Marks)

1. Specify the two reasons for using layered protocols.
2. What is the principle difference between connectionless communication and connection-oriented communication ?
3. What is the encoding technique adopted in IEEE802.5 standard. Encode the following binary information by using the same technique. 0 1 0 0 1 1 0 1.
4. What is the difference between FDM and FDMA ?
5. What are the possible ways to cause congestion ?
6. What is meant by source quenching ?
7. What is Virtual Private Network ?
8. What is meant by Process-to-process delivery ?
9. What are the differences between TDM and TSI ?
10. What are the advantages of ESS ?

Part – B (5 x16 = 80 Marks)

11. (a) Explain the TCP/IP protocol Architecture and also explain how this protocol is configured for communication. (10)
- (b) A broadcast network is one in which the transmission from any one attached station is received by all other attached stations over a shared medium. Examples are bus topology LAN, such as Ethernet and a wireless radio network. Discuss the need or lack of need for a network layer (OSI layer3) in a broadcast network. (3)
- (c) Given a channel with an intended capacity of 20 Mbps, the bandwidth of the thermal noise, what signal to noise ratio is required to achieve this capacity. (3)
12. a. (i) Discuss with vertical time sequence diagram of Go back – N ARQ. (8)
- (ii) A series of information frames with a mean length of 2000 bits is to be transmitted across a data link 4000km long at data rate of 2 Mbps. If the link has a velocity of propagation of 2×10^8 m/s and the BER of 10^{-4} . Determine the link efficiency using the following link protocols (8)
 - (i) Stop and wait ARQ
 - (ii) Go-back-N retransmission and send window of 127.
 - (iii) Selective reject and send window of 7
- (OR)
- b. (i) A large population of ALOHA users manage to generate 50 requests/sec., including both originals and retransmissions. Time is slotted in units of 40 msec. (8)
 - What is the chance of success on first attempt ?
 - What is the probability of exactly K collision and then a success ?
 - What is the expected number of transmission attempts needed ?
- (ii) Explain the collision – free protocols. (8)

13. a. (i) What are the limitations of Distance vector routing? Justify your answer. (4)
(ii) Shown below a packet switched network, find the least cost path using link state routing algorithm. (12)



(OR)

13. b. (i) Explain the various techniques available for QOS enhancements. (4)
(ii) Explain the token bucket algorithm and also discuss about its merits. (8)
(iii) A network flow specification that has a maximum packet size of 1000 bytes, a token bucket rate of 10 million bytes/sec and a maximum transmission rate of 50 million bytes/sec. How long can a burst at maximum speed last? (4)
14. a. Explain the protocols used for remote login and file transfer. (16)
(OR)
b. Explain clearly the Data Encryption Standard (DES) ? Discuss about the limitations of DES. (16)
15. a. Explain the TST and STS switching techniques and also compare the complexities of both the techniques. (16)
(OR)
b. Explain with architecture of Digital Cross connect system. (DCS) (16)