

B.E. 6th Semester (ECE) Examination, May-2011

COMPUTER NETWORKS

Paper-IT-305-E

Time allowed : 3 hours]

[Maximum marks : 100

Note : Attempt any *five* questions out of eight.

1. (a) How does a computer know whether an arriving frame contains an IP datagram or an ARP message ? 6
- (b) Could IP be redesigned to use hardware addresses instead of the 32-bit addresses it currently uses ? Why or why not ? 8
- (c) Write a computer program that can translate between 32-bit numbers and dotted decimal form. 6
2. (a) Describe how layers in the ISO reference model corresponds to layers in the TCP /IP reference model. 10
- (b) If a given router can connect to at most K networks, how many routers, R, are required to connect N networks ? Write an equation that gives R in terms of N and K. 10

3. (a) Why are Ethernet and Token Ring inappropriate for use in WAN ? 8
- (b) What are virtual private networks ? Give examples to support your answer. 6
- (c) Can one network topology be used for both WAN and LAN connections ? How ? 6
4. Write short notes on : 20
- (a) Network topologies (any two in detail)
- (b) Protocols of each layer.
5. (a) Explain the process of forwarding an IP datagram. 6
- (b) What is the chief advantage of using virtual packets instead of frame ? 6
- (c) Assume two routers are misconfigured to form a routing loop for same destination, D. Explain why a datagram destined for D will not go around the loop forever. 8
6. (a) Explain the IEEE 802 standards in detail. 10
- (b) Compare and contrast fast Ethernet and Gigabit Ethernet. 10

7. (a) Explain the various Routing strategies used in WAN. 10
- (b) What is a wireless link ? Explain. 5
- (c) Explain the concept of DQDB. 5
8. Write short notes on :
- (a) Proxy Server
- (b) CSMA
- (c) HTTP.