

ALCCS – OLD SCHEME

Time: 3 Hours

FEBRUARY 2013

Max. Marks: 100

PLEASE WRITE YOUR ROLL NO. AT THE SPACE PROVIDED ON EACH PAGE IMMEDIATELY AFTER RECEIVING THE QUESTION PAPER.

NOTE:

- Question 1 is compulsory and carries 28 marks. Answer any FOUR questions from the rest. Marks are indicated against each question.
- Parts of a question should be answered at the same place.

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- Q.1** a. What are the advantages of layered architecture of a network model?
 b. Differentiate between FDM and TDM technique.
 c. Why Wireless LANs cannot implement CSMA/CD?
 d. Discuss Piggybacking?
 e. Generally, the large network uses dynamic routing. Why?
 f. List the services provided by Point-to-Point protocol?
 g. Discuss the difference between trivial FTP and FTP application layer protocols?
(7×4)
- Q.2** a. Define Frame Relay? Give some of its feature? Also, discuss the frame format of different fields of the Frame Relay?
(2+4+6)
 b. If the generator polynomial is $x^4 + x + 1$ and the message bits are 1101011011, obtain the CRC code?
(6)
- Q.3** a. Discuss with the help of a figure the frame structure of IEEE 802.3. (10)
 b. Compare the two basic scheduling approaches in Medium access control? (8)
- Q.4** a. Differentiate between:
 (i) 1-persistent and p-persistent CSMA
 (ii) Markov chain and Embedded markov chains (10)
 b. Give the diagram of ARP packets and discuss the different fields of it? (8)
- Q.5** a. What are the various goals of a routing algorithms? (6)

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- b. Discuss the different fields related to fragmentation and reassembly of an IPv4 datagram. (6)
- c. Suppose a router receives an IP packet containing 600 data bytes and has to forward the packet to a network with maximum transmission unit of 200 bytes. Assume that the IP header is 20 bytes long. Show the fragments that the router creates and specify the relevant values in each fragment header (i.e., total length, fragment offset, and more bit). (6)
- Q.6** a. Give the format of ICMP header and explain the meaning of each field. (9)
- b. Define UDP and discuss the different fields of the format of a used datagram. Also, list some of the uses of the UDP protocol. (9)
- Q.7** a. Explain the features of TCP protocol. (9)
- b. What is RSA Public-key Cryptosystem? Explain RSA encryption algorithm with the help of an example. (9)