



Reg. No. :

Name :

First Semester M.Tech. Degree Examination, March 2013
(2008 Scheme)
(Computer Science and Engineering)
RCC – 1005 : ADVANCED COMPUTER NETWORKS

Time : 3 Hours

Max. Marks : 100

Instruction : Answer any five full questions.

(5×20=100 Marks)

- I. a) What is the necessity of UDP ? Explain why a user program cannot directly access IP ? 6
- b) What are the pros and cons of intermediate reassembly of an internet fragmented datagram vs reassembly at the final destination ? 6
- c) Compare IPv4 and IPv6. 8
- II. a) What are the key differences between frame relaying and conventional X.25 packet switching ? 6
- b) Describe briefly the protocol architecture for ATM. What features of the protocol make it achieve high data rates ? 6
- c) What are the three different types of media used with IEEE 802.11 ? 8
- III. a) What are the limitations of routing Information protocol ? 6
- b) When multiple equal-cost routes to a destination exist, OSPF may distribute traffic equally among the routes. This is called load balancing. What effect does such load balancing have on a transport layer protocol such as TCP ? 6
- c) Discuss how path vector routing is employed in Border Gateway Protocol (BGP). 8

P.T.O.



- IV. a) Explain how the concept of a Committed Information Rate (CIR) is used for traffic rate management in Frame Relay Bearer service. 6
- b) A channel has a data rate of 4 kbps and a propagation delay of 20 ms. For what range of frame sizes does stop and wait give an efficiency of at least 50%? 6
- c) Explain how Retransmission Timer is used for TCP congestion control. 8
- V. a) Describe the design goals of RED algorithm. 6
- b) In the RED algorithm, there are a number of parameters to be set. What is the relationship between the value chosen for TH_{min} and the degree of burstiness in the traffic? 6
- c) In RSVP, because the UDP/TCP port numbers are used for packet classification each router must be able to examine these fields. This requirements raises problems in the following areas :
- a) IPv6 header processing
 - b) IP level security
- Indicate the nature of problems in each area and suggest a solution. 8
- VI. a) Consider the following character string and assume that the relative probabilities of the symbols are reflected in this string [eg : $Pr(a) = 2/40$]. aa bbb cccc ddddd eeeee fffffff gggggggg. Show the code for this string for :
- a) Hoffman 6
 - b) LZW 6
 - c) Arithmetic 8
- b) Explain the salient features of string matching algorithms. 6
- c) How is Discrete Cosine Transform (DCT) used in Compression? 8
-