3E7940

Roll No. : _____ Total Printed Pages : 2

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M.Tech. (Sem. III) (Main / Back) Examination, March - 2010
Computer Science & Engineering
(3MCS2.3 Network System Design)

Time : 3 Hours] [Total Marks : 100
[Min. Passing Marks : 33

*Attempt any **five** questions. Marks of questions are indicated against each question. Draw neat and comprehensive sketches wherever **necessary** to clearly illustrate your answer. Assume missing data suitably if any and specify the same.*

Use of following supporting material is permitted during examination.

(Mentioned in form No. 205)

1. Nil 2. Nil

1 (a) What is a difference between TCP and UDP? Explain each field of IPV4 datagram header in brief. 4+6

(b) Explain network systems engineering with the help of packet processing. How we can achieve high speed in a network? 5+5

2 (a) Explain Ingress and Egress processing. 10

(b) What is IP Datagram fragmentation? Write IP fragmentation algorithm for datagrams. 3+7

3 (a) What are the primary architectural characteristics for the network processor? 12

(b) Estimate the clock rate needed for a RISC processor that forwords layer 3 packets (IP datagram) from an OC-192 line. 8

4 (a) What are heterogeneous processors? Explain internal structure of cognigine network processor (RCU). 3+7

(b) What is IXP2 Explain memory hierarchy for 1XP 1200. 3+7

5 (a) Write a set of assembly language macros that use the scratchpad memory test and set operations to implement counting semaphores. 10

(b) Explain processor coordination via memory locking. 10

6 (a) Explain the internal architecture of Intel IXP 2400. 12

(b) What are the enhanced capabilities and facilities provided by the IXP 2400 ? 8

7 Write the short notes on any two of the followings :

(a) TCP splicing Algorithm

(b) RISC Vs CISC

(c) Intel Dispatch Loop Macros.