GUJARAT UNIVERSITY

K. S. SCHOOL OF BUSINESS MANAGEMENT

M.Sc. IN COMPUTER APPLICATIONS AND INFORMATION TECHNOLOGY

[Five Years' (Full-time) Integrated Degree Course]

Sixth Semester M.Sc. (CA & IT)

KS_C_CC -366 Implementation of Data Communication and Networking (Practical on CC-363)

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3 credit course

Objective:

To implement the basics of Computer Networks, Practical related to each layer of OSI and TCP/IP models and interactions between them.

UNIT I: **(20%)**

- Implementation of Framing Techniques (Character Count, Byte Stuffing, Bit Stuffing)

UNIT II: **(20%)**

- Implementation of Error Detection and Correction Techniques (Single Bit Parity, Block Parity, Checksum, CRC Checksum, Hamming Code)

UNIT III: **(20%)**

- Implementation of All Data Link Layer Protocols

UNIT IV: **(20%)**

- Implementation of Cryptography (using Java Security/Cryptography Packages)

UNIT V: **(20%)**

- Implementation of Symmetric Block Ciphers
- Implementation of Asymmetric Ciphers: RSA

Recommended Lecture Scheme: Approximately 45 hours of classroom teaching

Recommended Practical Scheme: Not Applicable

Assignment: One assignment every month.

Text Books:

1. Computer Networking
   By Andrew S. Tanenbaum, Prentice Hall, Fourth Edition
2. Computer Networks
   By Bhushan H Trivedi, Oxford Univercity Press

Reference Books:

1. Advanced Programming in Unix Environment
   By W. Richard Stevens, Pearson Education Publications, Second Edition (to study how system calls can be used)
2. C Odyssey: Unix the open Boundless C
   By Vijay Mukhi, BPB Publications, PaperbackEdition (1992) (for learning how to read and write data using named pipes)
3. Beginning Cryptography with Java
   By David Hook, Wrox/ Wiley-Dreamtech Publications, Special Indian Edition (2005)
4. Java Cryptography
   By Jonathan Knudsen, O'Reilly Publishers, First Edition (1998)