RAMAKRISHNA MISSION VIDYAMANDIRA

(Residential Autonomous College under University of Calcutta)

Syllabus For B.Sc. Computer Science Honours

For the session 2010-13

Semester - IV (January - May)

Paper – *CMSA401 (Theory)*

MARKS: 75

Computer Networking, Data Communication & Internet Technology: (Marks 40)
Data Communications; Transmission Media; Network: Protocol and standards; Analog & Digital Signals, Periodic & Non-periodic signals, Time and Frequency Domain;

Multiplexing: FDM, TDM and Application, Encoding D/A and A/D Encoding;

Error: Different types of Errors and their detection, Concepts of Centralized and Distributed Computing; Advantages of Networking;

Layered Architecture: OSI Architecture, Basic Features, LAN, MAN and WAN; Simple PC based Network: Example, Block Diagram, Mode of Operation and Characteristic Features.

Intranet and Internet; Servers and Clients; Ports; Domain Name Server (DNS); Accounts, Internet Service Providers;

Connections: Dial Up, ISDN, ADSDN; Cable, Modem; E-Mail: Account, Sending, Receiving, Mailing List, IRC, Voice and Video Conferencing, WWW, Browsers.

Microprocessor: (Marks 35)
Evolution of Microprocessor: Architecture of 8 bit and 16 bit microprocessor Machine Language Instructions, Addressing Modes, Instruction Formats, Instruction Sets, Instruction Cycle, Clock Cycles, Timing Diagrams, Interrupts, DMA, Bus Standards and types.

Interfacing concepts: Memory Interfacing, I/O Interfacing and Ports – Keyboard Interfacing, Display Interfacing, Storage Device Interfacing, Programming a Microprocessor, Interrupt Handling, Methods of Interrupts, Priority and Management.

Case Studies: 8085 and 8086 microprocessor.

Paper – *CMSA402 (Practical)*
MARKS: 25

Assembly Language Programming & I/O Interfacing: (Marks 25)
Experiment with 8085A based micro computing kits + 8086 simulators

1. Data movement between register – register, register-memory, memory-memory.
- Arithmetic operations on single byte, word and multi-byte integer, signed and hexadecimal operands.
- Ordered arrangement of a set of operands.
- Sorting and Searching.
- Block Replacement and transfer.
- Parity Generator.
- Delay Routines.

Interfacing:

2. Display of Alphanumeric Characters on 7 segment displays.
- Matrix Keyboard Interfacing and Identification of the keys.

References:

1. Data Communications and Networking by Behrour A. Forouzan, 4th Edition, TMH.
2. Data and Computer communication by William Stallings, 6th Edition, Pearson Education
3. Computer Networks by Tanenbaum, Pearson Education.
4. Microprocessor Architecture, Programming and Applications With The 8085 by Gaonkar, Penram International Publishing India.
5. Microprocessor 8085 and Its Interfacing by Sunil Mathur, PHI
6. The Intel Microprocessor by Barry B Bray, Pearson Education.
7. Microprocessor and Interfacing by Hall, Tata McGraw-Hill Education,
8. The Intel Microprocessor by Brey, Pearson Education. Microprocessors And Interfacing 2E By Hall, McGrawHill.