Text Book:

1. Sumitabha Das: UNIX – Concepts and Applications, 4th Edition, Tata McGraw Hill, 2006.
   (Chapters 1.2, 2, 4, 6, 7, 8, 9, 10, 11, 12, 13, 14, 18, 19)

Reference Books:

1. Behrouz A. Forouzan and Richard F. Gilberg: UNIX and Shell Programming, Cengage Learning, 2005.
2. M.G. Venkateshmurthy: UNIX & Shell Programming, Pearson Education, 2005.

MICROPROCESSORS
(Common to CSE & ISE)

Subject Code: 10CS45	I.A. Marks : 25
Hours/Week : 04	Exam Hours: 03
Total Hours : 52	Exam Marks: 100

PART A

UNIT – 1   **7 Hours**

Introduction, Microprocessor Architecture – 1: A Historical Background, The Microprocessor-Based Personal Computer Systems.
The Microprocessor and its Architecture: Internal Microprocessor Architecture, Real Mode Memory Addressing.

UNIT – 2   **7 Hours**

Microprocessor Architecture – 2, Addressing Modes: Introduction to Protected Mode Memory Addressing, Memory Paging, Flat Mode Memory Addressing Modes: Data Addressing Modes, Program Memory Addressing Modes, Stack Memory Addressing Modes

UNIT – 3   **6 Hours**

Programming – 1: Data Movement Instructions: MOV Revisited, PUSH/POP, Load-Effective Address, String Data Transfers, Miscellaneous Data Transfer Instructions, Segment Override Prefix, Assembler Details.
Arithmetic and Logic Instructions: Addition, Subtraction and Comparison, Multiplication and Division.

UNIT - 4   **6 Hours**

Programming – 2: Arithmetic and Logic Instructions (continued): BCD and ASCII Arithmetic, Basic Logic Instructions, Shift and Rotate, String Comparisons.

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Program Control Instructions: The Jump Group, Controlling the Flow of the Program, Procedures, Introduction to Interrupts, Machine Control and Miscellaneous Instructions.

PART B

UNIT - 5   **6 Hours**

Programming – 3: Combining Assembly Language with C/C++: Using Assembly Language with C/C++ for 16-Bit DOS Applications and 32-Bit Applications
Modular Programming, Using the Keyboard and Video Display, Data Conversions, Example Programs

UNIT - 6   **7 Hours**

Hardware Specifications, Memory Interface – 1: Pin-Outs and the Pin Functions, Clock Generator, Bus Buffering and Latching, Bus Timings, Ready and Wait State, Minimum versus Maximum Mode.
Memory Interfacing: Memory Devices

UNIT – 7   **6 Hours**

Memory Interface – 2, I/O Interface – 1: Memory Interfacing (continued): Address Decoding, 8088 Memory Interface, 8086 Memory Interface.
Basic I/O Interface: Introduction to I/O Interface, I/O Port Address Decoding.

UNIT 8   **7 Hours**

I/O Interface – 2, Interrupts, and DMA: I/O Interface (continued): The Programmable Peripheral Interface 82C55, Programmable Interval Timer 8254.
Interrupts: Basic Interrupt Processing, Hardware Interrupts: INTR and INTA/; Direct Memory Access: Basic DMA Operation and Definition.

Text Book:
1. Barry B Brey: The Intel Microprocessors, 8th Edition, Pearson Education, 2009.
   (Listed topics only from the Chapters 1 to 13)

Reference Books:
1. Douglas V. Hall: Microprocessors and Interfacing, Revised 2nd Edition, TMH, 2006.
2. K. Udaya Kumar & B.S. Umashankar : Advanced Microprocessors & IBM-PC Assembly Language Programming, TMH 2003.
3. James L. Antonakos: The Intel Microprocessor Family: Hardware and Software Principles and Applications, Cengage Learning, 2007.

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