B. Sc. (Information Tech	Semester – II		
Course Name: Microprocessor Architecture		Course Code: USIT202	
Periods per week (1 Period is 50 minutes)		5	
Credits		2	
	Hours	Marks	
Evaluation System	Theory Examination	21/2	75
	Internal		25

Unit	Details	Lectures
Ι	Microprocessor, microcomputers, and Assembly Language:	
	Microprocessor, Microprocessor Instruction Set and Computer	
	Languages, From Large Computers to Single-Chip Microcontrollers,	
	Applications.	
	Microprocessor Architecture and Microcomputer System:	
	Microprocessor Architecture and its operation's, Memory, I/O Devices,	
	Microcomputer System, Logic Devices and Interfacing,	12
	Microprocessor-Based System Application.	14
	8085 Microprocessor Architecture and Memory Interface:	
	Introduction, 8085 Microprocessor unit, 8085-Based Microcomputer,	
	Memory Interfacing, Interfacing the 8155 Memory Segment,	
	Illustrative Example: Designing Memory for the MCTS Project,	
	Testing and Troubleshooting Memory Interfacing Circuit, 8085-Based	
	Single-Board microcomputer.	
II	Interfacing of I/O Devices	
	Basic Interfacing concepts, Interfacing Output Displays, Interfacing	
	Input Devices, Memory Mapped I/O, Testing and Troubleshooting I/O	
	Interfacing Circuits.	
	Introduction to 8085 Assembly Language Programming:	
	The 8085 Programming Model, Instruction Classification, Instruction,	
	Data and Storage, Writing assembling and Execution of a simple	12
	program, Overview of 8085 Instruction Set, Writing and Assembling	
	Program.	
	Introduction to 8085 Instructions:	
	Data Transfer Operations, Arithmetic Operations, Logic Operation,	
	Branch Operation, Writing Assembly Languages Programs, Debugging	
	a Program.	
III	Programming Techniques With Additional Instructions:	
	Programming Techniques: Looping, Counting and Indexing,	
	Additional Data Transfer and 16-Bit Arithmetic Instructions,	
	Arithmetic Instruction Related to Memory, Logic Operations: Rotate,	
	Logics Operations: Compare, Dynamic Debugging.	
	Counters and Time Delays:	10
	Counters and Time Delays, illustrative Program: Hexadecimal Counter,	12
	Inustrative Program: zero-to-nine (Modulo Ten) Counter, Generating	
	Pulse waveforms, Debugging Counter and Time-Delay Programs.	
	Stacks and Sub-Koutines:	
	Stack, Subroutine, Kestart, Conditional Call, Return Instructions,	
	Auvanceu Subroutine concepts.	

IV	Code Conversion, BCD Arithmetic, and 16-Bit Data Operations:		
	BCD-to-Binary Conversion, Binary-to-BCD Conversion, BCD-to-		
	Seven-Segment-LED Code Conversion, Binary-to-ASCII and ASCII-		
	to-Binary Code Conversion, BCD Addition, BCD Subtraction,		
	Introduction To Advanced Instructions and Applications,		
	Multiplication, Subtraction With Carry.		
	Software Development System and Assemblers:		
	Microprocessors-Based Software Development system, Operating		
	System and Programming Tools, Assemblers and Cross-Assemblers,		
	Writing Program Using Cross Assemblers.		
	Interrupts:		
	The 8085 Interrupt, 8085 Vectored Interrupts, Restart as S/W		
	Instructions, Additional I/O Concepts and processes.		
V	The Pentium and Pentium Pro microprocessors: Introduction,		
	Special Pentium registers, Memory management, Pentium instructions,		
	Pentium Pro microprocessor, Special Pentium Pro features.		
	Core 2 and later Microprocessors: Introduction, Pentium II software	12	
	changes, Pentium IV and Core 2, i3, i5 and i7.		
	SUN SPARC Microprocessor: Architecture, Register file, data types		
	and instruction format		

Books and References:								
Sr. No.	Title	Author/s	Publisher	Edition	Year			
1.	Microprocessors	Ramesh Gaonkar	PENRAM	Fifth	2012			
	Architecture, Programming							
	and Applications with the							
	8085.							
2.	Computer System	M. Morris Mano	PHI		1998			
	Architecture							
3.	Structured Computer	Andrew C.	PHI					
	Organization	Tanenbaum						