

CS- 601 –MICROPROCESSOR & INTERFACING

UNIT-I

Introduction to microprocessors, Microprocessor architecture and its operations, memory, inputs-outputs (I/Os), data transfer schemes interfacing devices, architecture, advancements of microprocessors.

UNIT-II

Architecture of 8085 microprocessor, Instruction set and Addressing modes of 8085 microprocessor, Assembly language programs of 8085 microprocessor, Stack, Subroutines, Time-Delay loops, Modular programming, Macro.

UNIT-III

8086 Microprocessor: - Architecture, Register, Memory Segmentation, 8086 Memory Addressing Memory Read and Write Bus Cycle of 8086, Demultiplexing of the system Bus in 8086 and 8088 microprocessors, Instruction set and Addressing modes of 8086 microprocessor, Assembly language programs of 8086 microprocessor.

UNIT-IV

I/O and Memory Interfacing Using 8085/8086, Interrupts of 8085/8086 Microprocessors, 8259A Programmable Interrupt Controller, Programmable peripheral Interface, 8253 Programmable Counter/Interval Timer, Communication and Bus Interfacing with 8085/8086 Microprocessor, Serial Communication Interface, DMA Controller 8257, 8279-Programmable Keyboard and Display I/O Interface, Bus Interface, 8089 I/O processor.

UNIT-V

8051 Microcontroller: - Architecture of 8051 microcontroller, Memory organization, Timers/Counters, Interrupts, Addressing modes, 8051 Instruction set, Assembly language Programs, Applications of microcontrollers.

SUGGESTED READING:

1. Douglas V Hall, "Microprocessors and interfacing – Programming & Hardware" TMH
2. Gaonkar, "Microprocessor Architecture, Programming & Applications with 8085", TMH Grading System 2013 - 14
3. Rafiquzzaman, "Microprocessors-Theory & Applications", PHI
4. Savaliya, "8086 Programming & Advance Processor Architecture", Wiley India
5. Ray, Bhurchandi, "Advanced Microprocessor and peripherals" TMH Pub
6. Soumitra Kumar Mandal, "Microprocessors and Microcontroller" TMH Pub

LIST OF EXPERIMENTS:-

1. To study 8085 based microprocessor system
2. To study 8086 based microprocessor system
3. To develop and run a program for finding out the largest/smallest number from a given set of numbers.
4. To develop and run a program for arranging in ascending/descending order of a set of numbers
5. To perform multiplication/division of given numbers
6. To perform conversion of temperature from 0F to 0C and vice-versa
7. To perform computation of square root of a given number
8. To perform floating point mathematical operations (Addition, Subtraction, Multiplication and Division)
9. To obtain interfacing of RAM chip to 8085/8086 based system
10. To obtain interfacing of keyboard controller

CS- 602 –INFORMATION STORAGE & MANAGEMENT

UNIT-I

Introduction: - Data proliferation, evolution of various storage technologies, Overview of storage infrastructure components, Data creation and The value of data to a business, Information Lifecycle Management, Challenges in data storage and data management, Solutions available for data storage, Core elements of a Data Center infrastructure, Data categorization.

UNIT-II

Storage Systems Architecture:- Intelligent disk subsystems overview, Contrast of integrated vs modular arrays, Component architecture of intelligent disk subsystems, Disk physical structure components, properties, performance, and specifications, RAID levels & parity algorithms, hot sparing, Front end to host storage provisioning, mapping and operation.

UNIT-III

Introduction To Networked Storage: - Evolution of networked storage, Architecture, components, and topologies of FC-SAN, NAS, IP-SAN, Applications, Elements, connectivity, standards, management, security and limitations of DAS, NAS, CAS & SAN.

Introduction to Information Availability: - Business Continuity and Disaster Recovery Basics, Local business continuity techniques, Remote business continuity techniques, Disaster Recovery principles & techniques.

UNIT-IV

Managing & Monitoring: - Management philosophies (holistic vs. system & component), Industry management standards (SNMP, SMI-S, CIM), Standard framework applications, Key management, Metric analysis methodologies & trend analysis, Reactive and pro-active management best practices, Provisioning & configuration change planning, Problem reporting, prioritization, and handling techniques, Management tools overview.

UNIT-V

Securing Storage and Storage Virtualization: - Information security, Critical security attributes for information systems, Storage security domains, List and analyzes the common threats in each domain, Virtualization technologies, block-level and file-level virtualization technologies and processes.

REFERENCE BOOKS:

1. EMC Corporation, Information Storage and Management, Wiley, India.
2. Robert Spalding, “Storage Networks: The Complete Reference“, Tata McGraw Hill , Osborne, 2003.
3. Marc Farley, “Building Storage Networks”, Tata McGraw Hill ,Osborne, 2001.
4. Additional resource material on www.emc.com/resource-library/resource-library.esp

CS- 603 – PRINCIPAL OF PROGRAMMING LANGUAGE

UNIT-I

Programming Language and its Implementation :- Programming Language, Language categories, Language Evaluation Criteria, impacts on Language design, Programming Paradigms – Imperative, Object Oriented programming Structure, functional Programming, Logic Programming, Programming Language Implementation, Compilation process and Virtual Machines, programming environments.

UNIT-II

Data types and Statements: Overviews of Data type, category of data type, primitive and Non primitive data types, design and Implementation uses related to these types, Names, Variable, type checking, strong typing, type compatibility, named constants, variable initialization, control statement with Expressions, Conditional Statements, Loops, Exception handling.

UNIT-III

Subprograms and Blocks: Overviews of sub-programs, Lifetime and Scope of variable, static and dynamic scope, Design issues of subprograms, parameter passing methods:- call by value, address and reference , overloaded sub-programs, Method Overriding, generic subprograms, , co-routines.

UNIT-IV

Abstract Data types: Data abstraction, level of abstraction, Abstractions and encapsulation, abstract data type, Static and Stack-Based Storage management, heap based storage management, Garbage Collection, object oriented programming in small talk, C++, Java, C#, PHP, Perl, Concurrency:- Subprogram level concurrency, semaphores, monitors, message passing, Java threads, C# threads.

UNIT-V

Exception handling: Error, Type of Error, Exceptions, Type of Exception, exception Propagation, Exception handler in C++ and Java, Try, catch and throw statement, multiple catch.

Suggested Reading:

1. Sebesta, "Concept of programming Language", Pearson Edu.
2. Louden, "Programming Languages: Principles & Practices", Cengage Learning
3. Tucker, " Programming Languages: Principles and paradigms ", Tata McGraw –Hill
4. Terrance W Pratt, "Programming Languages: Design and Implementation" Pearson Edu.
- 5 Cavlo Ghezzi & Mehdi Jazayeri "Programming Languages Concepts", Willey India
- 6 E Horowitz, "Programming Languages", 2nd Edition, Addison Wesley

CS- 604 – COMPUTER GRAPHICS & MULTIMEDIA

UNIT-I

Introduction and Overview of Graphics Systems:- Introduction to Computer Graphics, Application area of Computer Graphics, Introduction to Raster scan & Random scan displays, refreshing, flickering, interlacing, colour monitors, display processors resolution, working principle of dot matrix, inkjet laser printers, working principles of keyboard, mouse scanner, digitizing camera, track ball, tablets and joysticks, graphical input techniques etc.

UNIT-II

Scan conversion techniques, image representation, line drawing, simple DDA, Bresenham's Algorithm, Circle drawing, general method, symmetric DDA, Bresenham's Algorithm, curves, parametric function, Bezier Method, B-spline Method.

UNIT-III

2-D Transformation: - Translation, Rotation, Scaling, Shearing, Reflection, Inverse Transformation, Homogenous coordinate system, Matrices Transformation, Composite Transformation.

Windowing & Clipping:- World Coordinate System, Screen Coordinate System, Viewing Transformation, Line Clipping & Polygon Clipping Algorithms

UNIT-IV

3-D Transformations: - Translation, Rotation and Scaling, **Parallel & Perspective Projection:-** Types of Parallel & Perspective Projection, **Hidden Surface elimination:-** Depth comparison, Back face detection algorithm, Painter's Algorithm, Z-Buffer Algorithm, Curve generation, Bezier and B-spline methods. **Basic Illumination Model:-** Diffuse reflection, Specular reflection, Phong Shading, Gouraud shading, Ray Tracing, Color models like RGB, YIQ, CMY, HSV.

UNIT-V

Multimedia :- Characteristics of a multimedia presentation, Uses of Multimedia, **Text:-** Types, Unicode Standard, text Compression, Text file formats, Audio Components of an audio system, Digital Audio, Digital Audio processing, Sound cards, Audio file formats, Audio Processing software, **Video: -**Video color spaces, Digital Video, Digital Video processing, Video file formats.

Animation:- Uses of Animation, Principles of Animation, Computer based animation, 3D Animation, Animation file formats, Animation software's.

REFERENCES:-

1. Rogers, "Procedural Elements of Computer Graphics", Tata McGraw Hill
2. Donald Hearn and M.Pauline Baker, "Computer Graphics C Version", Pearson Education, 2003.

3. Prabat K Andleigh and Kiran Thakrar, “Multimedia Systems and Design”, PHI Learning, 3rd Indian reprint edition, 2008.
4. Tay Vaughan, “Multimedia making it work”, Tata McGraw Hill edition.
5. Amarendra N Sinha & Arun D Udai , “Computer Graphics”, McGraw Hill publication Fundamental of Computer Graphics and Multimedia, Mukherjee, , PHI Learning

LIST OF EXPERIMENTS

1. To implement Bresenham’s algorithms for line, circle and ellipse drawing.
2. To perform 2D Transformations such as translation, rotation, scaling, reflection and shearing.
3. To implement Cohen–Sutherland 2D clipping and window–viewport mapping.
4. To perform 3D Transformations such as translation, rotation and scaling.
5. To visualize projections of 3D images and Hidden Surface Elimination.
6. To convert between color models.
7. To implement text compression algorithm
8. To implement image compression algorithm
9. To perform animation using any Animation software
10. To perform basic operations on image using any image editing software

CS- 605 – OBJECT ORIENTED PROGRAMMING WITH DOT NET

UNIT-I

Introducing VB.NET and the .NET Platform, Fundamentals of Design and Programming, Variables and Constants, Procedures and Functions, File I/O Arrays and Structures Events and More Controls, SQL connected mode, disconnected mode, dataset, data-reader Data base controls: Overview of data access data control, using grid view controls, using details view and frame view controls, ado .net data readers, SQL data source control, object data source control.

UNIT-II

OOPs Concept: - Class, Object, Component, Encapsulation, Inheritance and Types of Inheritance, Polymorphism & Object Creation and Instantiation, Programming Encapsulation, Understanding Encapsulation Concept through an example, Constructor & Inheritance , Type Casting of Reference Types, Abstract Class, OOPs, Interface & Polymorphism, Overview of Interface, Interface with examples.

UNIT-III

Introducing C#, Building C# Applications, Core C# Programming Constructs, Defining Encapsulated Class Types, Understanding Inheritance and Polymorphism, Understanding Structured Exception Handling, Understanding Object Lifetime, Advanced C# Programming Constructs, Working with Interfaces, Collections and Generics, Delegates, Events, and Lambdas, Indexers, Operators, and Pointers, Programming with WPF Controls.

UNIT-IV

Installing ASP.NET framework, overview of the ASP .net framework, overview of CLR, class library, overview of ASP.net control, understanding HTML controls, study of standard controls, validations controls, rich controls. Windows Forms:- All about windows form, MDI form, creating windows applications, adding controls to forms, handling Events, and using various Tolls.

UNIT-V

XML: - Introducing XML, Structure, and syntax of XML, document type definition (DTD), XML Schema, Document object model, Presenting and Handling XML, XML data source, using navigation controls, introduction of web parts, using java script, Web Services.

REFERENCES:

1. C# for Programmers by Harvey Deitel, Paul Deitel, Pearson Education
2. Balagurusamy; Programming in VB; TMH
3. Web Commerce Technology Handbook by Daniel Minoli, Emma Minoli , TMH
4. Web Programming by Chris Bates, Wiley
5. XML Bible by Elliotte Rusty Harold ,
6. ASP .Net Complete Reference by McDonald, TMH.
7. ADO .Net Complete Reference by Odey, TMH

LIST OF EXPERIMENTS:-

1. Working with call backs and delegates in C#
2. Code access security with C#.
3. Creating a COM+ component with C#.
4. Creating a Windows Service with C#
5. Interacting with a Windows Service with C#
6. Using Reflection in C#
7. Sending Mail and SMTP Mail and C#
8. Perform String Manipulation with the String Builder and String Classes and C#:
9. Using the System .Net Web Client to Retrieve or Upload Data with C#
10. Reading and Writing XML Documents with the XML Text-Reader/-Writer Class and C#
11. Working with Page and forms using ASP .Net.
12. Data Sources access through ADO.Net,
13. Working with Data readers, Transactions
14. Creating Web Application