JAVA PROGRAMMING

(BCA : 401)

UNIT-I: Introduction, Java Tokens, Java Statements, Command Line Arguments, Programming Style. Constants, Varisbles and Data Types

Constants, Variables, Data Types, Declaration of Variables, Giving Values ofVariables, Scope of Variables, Symbolic Constants, Type Casting, GettingValues of Variables, Standard Default Values, Java Program Structure, JavaVirtual Machine.

UNIT-II : Operators, Expressions and Statements : Arithmetic Operators, Relational Operators, Logical Operators, Assignment Operators,Increment and Decrement Operators, Conditional Operators, Bitwise Operators, Special Operators, Arithmetic Expressions, Evolution of Expressions, Precedence of Arithmetic Operators, Decision Making and Branching - Introduction, Decision Making with if Statement, Simple if Statement, The if. else Statement, Nesting of if....else Statements, else if Ladder, switch Statement, Operator, Decision Making and Looping,Tntrocuction, while Statement, do Statement, for Statement.

UNIT-III : Classes, Objects and Methods : Defining Class, Creating Objects, Accessing Class Members, Constructors, Methods Overloading.Static Members, Nesting of Methods, Inheritance : Extending a Class, Overriding Methods, final Variables and Methods, Final Classes, Finalize Methods, Abstract Methods and Classes, Visibility Control, Arrays, One Dimensional Arrays, Creating an Array, Two Dimensional Arrays, Strings,Vectors, Wrapper Classes.

UNIT-IV : Interfaces and Packages : Introduction, Defining Interfaces,Extending Interfaces, implementing Interfaces, Accessing Interface Variables,Packages; Introduction, Java API Packages, Using system Packages, Naming

Conventions, Creating Packages, Accessing a Packages, Using a Package,‘Adding a Ciass to a Package, Hiding Classes, Multithreaded Programming Introduction, Creating Threads, Extending the Thread Class, Stopping and Blocking a Thread, Life Cycle of a Thread, Using Thread Methods, Thread ‘Exceptions, Thread Priority and Synchronization.

UNIT-IV : Applet Programming : Inzoduction, How Applets Differ from Application, Preparing to Write Applets, Building Applet Code, Applet Life Cycle, Creating an Executable Applet, Designing a Web Page, Applet Tag, ‘Adding Appletto HTML File, Running the Applet, More About Applet Tag,Managing Errors and Exceptions; Introduction, Types of Errors, Exceptions,Syntax of Exception Handling Code, Multiple Catch Statement, Using finally Statement, Throwing Our Own Exceptions, Using Exceptions for Debugging.

Web Technology using PHP and MYSQL

(BCA: 402)

UNIT-I : PHP : Introduction 0 PHP Evaluation of PHP, function, String Crentirg and accessing, STINE Searching & Replacing String, Formatting Stings String Related Library function

UNIT-II: Array § Anson of an Army, Creating nden based and Associative arte ‘Accessing array Element Looping With

UNIT-III: HIL ¢ ‘Working with file and Directories

Understanding file & directo, Opening and closing & file Coping.

“enaming and deleting file working with directories, Creating and

UNIT-IV: ¢ Session and Cookie © Introduction 10 Session

Control, Session Functionality What is & Cookie, Setting Cookies

UNIT-V : MySQL * Introduction to RDBMS: Connection

with MySQL Datzbase, ‘Performing basic database operation (DML)

Artificial Intelligence

(BCA: 403)

UNIT-I : Al Concepts, Various definitions of AL Knowledge. Knowledge Pyramid, People and Computers; What computers can do better than people, what people can do better than computers, Characteristics of Al Problems, Problem Representation in Al Components of AL Al evolution, Application Areas of Al History of AL The Turing Test and The Revised Turing Test.

UNIT-II : Expert System : Components of Expert System; Knowledge Base, Inference Engine, User Interface, Features of Expert System, Expert System Life Cycle, Categories of Expert System, Rule Based vs Model Based Expert System, Advantages/Limitations of Expert System, Developing an Expert System; Identification, Conceptualization, Formalization, Implementation, Testing, Using an Expert System, Application Areas of Expert System.

UNIT-III: AT and Search Process : Brute Force Search, Depth First/Breadth First Search, Heuristic Search Hill Climbing, Constraint Satisfaction, Mean End Analysis, Best First Seach, A* Algorithm, AO* Algorithm, Beam Search.

UNIT-IV : Natural Language Processing : Introduction, Need, Goal, Fundamental Problems in Natural Language Understanding, How People Overcome Natural Language Problems,

Speech Recognition Introduction, Advantages and Approaches, Introduction to Robotics, Parts of a Robot Controlling.

UNIT-V : Applications : Communication, Communication as action, Formal grammar fora fragment of English, Syntactic Analysis, Augmented Grammars, Semantic interpretation, Ambiguity and disambiguation, Discourse understanding, Grammar induction, Probabilistic language processing, Probabilistic language models, Information retrieval, Information Extraction, Machine Translation.

Computer Network

(BCA-404)

Unit-I: troduction : Definition of a Computer Network, Components of a Computer network, Types of Network Based on Topology (Bus, Star,Ring, Mesh, Tree), Based on Size Technology and ownership (LAN, MAN,WAN) Network topologies, Linear Bus Topology, Ring Topology, StarTopology, Hierarchical or Tree Topology, Topology Compassion,Considerations when choosing a Topology; Switching, Circuit switching,Message switching, Packet switching, Implementation of packet switching,Relationship between Packet Size and Transmission time, Comparison ofswitching techniques; Multiplexing, FDM, Frequency division multiplexing,WDM, Wavelength division multiplexing, TDM, Time division Multiplexing.

Unit-II: Network Software & Network Standardization: Itroduction fetworks Software, Protocol hierarchy, Design issues for the layers, Meritsand De-merits of Layered Architecture, Service Primtives; Reference models,The OSI Reference Model, The TCP/IP Reference Model, Coniparison ofthe Is & the TCP/IP Reference Model.

Unit-III : Data Link Layer : Services provided to the Upper Layer, Framing, Error Control, Flow Control, IEE Standards for MAC Sub layer,Network Layer; Services provided to the Upper Layer, Routing Algorithms.(Centralized, Distributed), Congestion Control (Token Based and Non Token Based), Infemetworking.

Unit-IV: Data Communications Introduction : Theoretical basis for communication, Fourier analysis, Band limited singals, Maximum data rate of a channel; Transmission impairments, Attenuation distortion, Delay distortion, Dispersion, Noise : Data transmission modes, Serial & Parallel,Simplex, Half duplex, Synchronous & Asynchronous transmission.

Unit-V: Transmission Medium; Introduction : Transmission medium, Guided & Unguided Transmission medium; Twisted pair, Coaxial cable,Optical fiber, Comparison of fiber optics and copper wire; Wireless transmission.