Syllabus of
B.Sc. (Computer Science)
Optional Paper

Part III (Semester- VI)

COMPUTER SCIENCE BOARD

Prepared by Dr. S.B. Kishor
Chairman, Computer Science Board

GONDWANA UNIVERSITY, GADCHIROLI

SESSION 2014-2015
## B.Sc. – III (Computer Science)

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1. VB.NET
2. Data Communication With Cloud Computing Basics
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B.Sc. – III (Computer Science) SEMESTER – VI

Paper – I : E-COMMERCE AND HTML

Paper – II : Electives I: VB.Net

Electives II: Data Communication with Cloud Computing Basics

Electives III: JAVA
UNIT-I: E-Commerce and Introduction to Internet
Introduction- Internet, Basic Internet Terms, Internet Addressing, Protocols, Internet Protocols, Services of Internet, Search Engine.

UNIT-II: Basic of HTML and Tag
Introduction to HTML - Introduction, Features of HTML, Advantages & Disadvantages of HTML, HTML Editors, Step to Create and View HTML Document, Basic Structure of HTML Program
Tags & Attributes- Nesting of Tags, Classification of HTML Tags, Block Formatting Tags.

UNIT-III: Working with HTML
List - Introduction to Lists, Unordered List, Ordered List, Definition List, Nested List, Difference Between Ordered and Unordered List.
Linking - Introduction, Type of Hyperlink Creation, Working with Links, Pathname and Types, Types of Linking or Anchors.
Graphics in Web Page - Image Tag, Align Images, Embedding Inline Images and External Images,

Unit-IVA Advanced HTML
Tables - Basic table tags and their related attribute
Frames- Frames, <Frame> and <Frameset> tags and related attributes
Form designs, Form Controls, Text controls, password fields, radio buttons, and check boxes. Reset and submit buttons, form control selection, option processing and text area.

Books:

References:
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SEMMESTER – VI

PAPER-II: Electives I: VB.NET [Marks: 50]

UNIT – I: Introduction to .NET
Introduction to .NET Framework, Basic Functionality of CLR, MSIL, About Platform Independency, Language Interoperability, CTS and CLS, .NET Languages, Assemblies, Garbage Collection, Architecture of GC and Application Domain.

UNIT- II: Visual Studio.NET
WPF Designer and Windows Form Integration, Multi-Framework Targeting, Better Intelligent Support, Refactoring and Enhancements, Visual Studio Split View, Debugging the .NET Source Code

VB.NET Language: Features of VB.Net, Writing Programs in VB.Net, Compiling and Execution from Command Prompt

Data Types, Expressions and Operators: Option Statements, Basic Element of Programming (Data types, Variable, Constant, Control Flow Statement), Type Casting, Boxing and Unboxing, Built-in Functions in VB.Net, Sub Programs and Working with Arrays

UNIT- III: Object Oriented Programming with VB.Net
Principles of OOP, Data Encapsulation, Data Abstraction, Properties, Method Overloading, Constructors, Inheritance, Overloading and Overriding, Shadowing, Abstract Classes and Sealed Class, Polymorphism, Delegate - Unicast and Multicast, Events, Collections, Directories, Strings, String Builders, Attributes, Namespaces and Generics


Error Handling: Structured Error Handling, Error Categories, Debug and Trace Classes, Code Optimization, Testing Phases and Strategies

UNIT- IV: Data Access with ADO.NET
Introduction to Access Libraries ADO, Limitation of ADO, ADO.Net Objects and Usage, ADO.Net Managed Providers, Data Reader, Data Adapter and Dataset, Data Relation and Dataset, Data Binding, Connected and Disconnected Environments, Connection Pooling, ADO.Net Exceptions, Using Stored Procedures, N-Tier Database Application, Crystal Reports

Books:

References:
2) Anne Prince and Doug Lowe, “Murach’s VB.NET database programming with ADO.NET”.
3) Crystal Report – The Complete Reference, TMH
UNIT I: Data Communication


UNIT II: Data Communication Network


UNIT III: Communication Architecture


UNIT IV: Cloud Computing Basics


Books:

Reference:

2) Rajkumar Buyya, “Mastering cloud computing”, TMH
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SEMESTER –VI

Paper-II: Electives III: JAVA

[Marks: 50]

UNIT – I: Introduction to Java
History of Java, Features of Java, JDK Environment, Java Virtual Machine, Garbage Collection

Programming Concepts of Basic Java: Identifiers and Keywords, Data Types in Java, Java coding Conventions, Expressions in Java, Control structures, decision making statements, Arrays and its methods

UNIT – II: Objects and Classes
Object Fundamentals, Pass by value, ‘this’ reference, Data Hiding and Encapsulation, Overloading, Overriding Constructors, Finalization, Subclasses (Inheritance), Relationship between super class object and subclass object, implicit subclass object to super class object Conversion, Dynamic method dispatch.

Language Features: Scope rules, Static data, Static methods, Static blocks, Modifiers of Class, Method, Data Members and Variable, Abstract Classes, Interfaces, Packages, Importing Packages and Classes, User define packages.

UNIT – III: Exception Handling & Multithreading
Types of Exceptions try, catch, finally, throws keywords, creating your own exception, exceptions and Inheritance

Multithreading: Multithreading Concept, Thread Life Cycle, Creating multithreading Application, Thread Priorities, Thread synchronization.

UNIT – IV: Abstract Window Toolkit & Applets

Books:

References:
2) Jerry R Jackson Alan L, “Java by Example 1.2”, McClellan Publication