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

Part III (Semester- VI)

COMPUTER SCIENCE BOARD

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GONDWANA UNIVERSITY,
GADCHIROLI

SESSION 2014-2015

B.Sc. – III (Computer Science)

Semester V	**Paper 1:**	**SYSTEM ANALYSIS AND PROJECT MANAGEMENT**	**Theory : 50 Marks** **Internal : 10 Marks**	**Practical : 30 Marks**
	Paper 2:	**DATABASE PROGRAMMING WITH ORACLE**	**Theory : 50 Marks** **Internal : 10 Marks**	
Semester VI	**Paper 1:**	**E-COMMERCE AND HTML**	**Theory : 50 Marks** **Internal : 10 Marks**	**Practical : 30 Marks**
	Paper 2: **Elective** **1** **2** **3**	**VB.NET** **Data Communication With Cloud Computing Basics** **JAVA**	**Theory : 50 Marks** **Internal : 10 Marks**	

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

B.Sc. – III (Computer Science)
SEMESTER –VI
PAPER-I: E-COMMERCE AND HTML   [Marks: 50

UNIT-I: E-Commerce and Introduction to Internet
E-Commerce- Introduction, Application, Definition, Benefits of E-Commerce, Impediments of E-Commerce, Difference between Traditional and Electronic Commerce, E-Commerce Service,
Electronic Data Interchange (EDI): Introduction, Benefits, Value Added Services (VAS), On-line Payment Services, Trade Cycle.
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-IVAdvanced 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:
 1) Greenstein and Feinman," Electronic Commerce", TMH, 2000, TMH, ISBN-0-07-042141-2,
 2) Bhushan Dewan, "E-Commerce", S.Chand,2001, First Edition, ISBN - 81-219-2083-3,
 3) S.B. Kishor, "E-Commerce and Web Design", Das Ganu, ISBN 978-93-81660-52-2
References:
 1. Complete HTML, BPB, 2010, ISBN-13:978-0-07-070194-6.
     C.Xavier, "Web Technology and Design",TMH,2010, ISBN-13:978-81-224-1450-9

B.Sc. – III (Computer Science)
SEMESTER –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
Windows Applications: Introduction to System.Windows.Forms.DLL, Basic Controls and Event Driven Programming, Programming with Advanced Controls. **Windows Control Library**
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:
1) David I. Schneider, "An Introduction to Programming Using Visual Basic .Net", PHI, ISBN 81-203-2159-6
2) ShirishChavan, "Visual Basic .NET", Pearson, ISBN 81-317-1391-1
3) Mastering Crystal Report - BPB Publication, ISBN 13 9788176567091

References:

1) Jeffrey R. Shapiro, "The Complete Reference -Visual Basic .NET", TMH, ISBN-0-07-049511-4
2) Anne Prince and Doug Lowe, "Murach's VB.NET database programming with ADO.NET".
3) Crystal Report – The Complete Reference, TMH

B.Sc. – III (Computer Science)
SEMESTER –VI
Paper-II: Electives II: Data Communication With Cloud Computing Basics
[Marks: 50

UNIT I: Data Communication

Data Transmission- Concept and Terminology, Analog and Digital Data Transmission, Transmission Impairment, Transmission Media. Data Encoding – Digital Data, Analog Data, Digital Signal, Analog Signal. Digital Data Communication- Asynchronous and Synchronous Transmission, Error Detection Technique, Interfacing. Data Link Controls – Line Configuration, Flow Control, Error Controls, Data Link Control Protocols. Multiplexing – Frequency Division Multiplexes, Synchronous Time Division Multiplexing.

UNIT II: Data Communication Network

Circuit Switching- Communication Network, Circuit Switching, Single Node Network, Digital Network Concept, Concept Signaling. Packet Switching- Packet Switching Principal, Virtual Circuit and Datagram, Routing, Traffic Controls, X.25.LAN and MAN – LAN, MAN Technology, Bus/Tress Star Topologies, Optical Fiber Bus, Ring Topology, and Medium Access Control Protocols, LAN/MAN Standards.

UNIT III: Communication Architecture

Protocols and Architecture- Protocol, The Layered Approach, OSI Model, TCP/IP Protocol Suite, System Network Architecture. Internetworking – Principles of Internetworking, The Bridge, Routing With Bridge, Connectionless Internetworking, Connectionless Internetworking Work Protocol, Router-Level Protocol, Connection Oriented Internetworking.

UNIT IV: Cloud Computing Basics

Cloud Computing : Overview , History, Characteristics/Capabilities of Clouds, Cloud Components, First stake holders of Cloud market, Virtualization, Cloud Computing Architecture. Cloud Computing Services : SaaS, PaaS, IaaS, Cloud Computing Deployment Models – Public, Private, Hybrid and others. Cloud Benefits and Limitations, Security concerns & benefits. Cloud Environment Roles, cloud vs. Distributed Computing, Regulatory issues with cloud.

Books:
1) Willam Stalling "Data and Computer Communication", PHI, ISBN-81-7808-442-2
2) Forouzan,"Data Communication and Network", TMH, ISBN-0-07-049935-7
3) Toby Velte, Anthony Velte, "Cloud Computing A Practical Approach", McGraw-hill ,ISBN : 0071626948.

Reference:

1) Tim Mather, SubraKumarsamy," Cloud Security and Privacy", ISBN:0596802765
2) Rajkumar Buyya, " Mastering cloud computing", TMH

B.Sc. – III (Computer Science)
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
Abstract Window Toolkit: Components and Graphics, Containers, Frames and Panels, Layout Managers-Border Layout, Flow Layout, Grid Layout, Card Layout, AWT all Components, Event Delegation Model, Event Source and Handlers, Event Categories, Listeners, Applets-Applet Life Cycle, Applet Context, Inter applet communication.

Books:
1) Cay S Horstmann Gary Cornell, "Core JAVA 2 Vol -1, 2", The Sun Micro Systems Press, New Delhi, *ISBN*-13: 978-0470105559
2) Peter Van der Liden, "Just Java", The Sun Micro Systems Press, New Delhi, *ISBN,* 0130897930
3) E. Balaguruswamy, "Programming with Java - A Primer", The Sun Micro Systems Press, New Delhi, *ISBN* 81-265-0931-7

References:
1) Deitel and Deitel, "Java How to Program", Prentice Hall Upper Saddle River, New Jersey 07458 (US). ISBN 0-13-034151-7
2) Jerry R Jackson Alan L, "Java by Example 1.2", McClellan Publication