

# BACHELOR OF COMPUTER APPLICATION (BCA) III<sup>rd</sup> Year 2013

## 1. Courses of Study and Examination

Paper	Paper Name	Duration of exam. (hours)	Max. Marks		Total
			University Exam.	Internal Assessment	
Paper-I (BCA-301)	Software Engineering	3	75	25	100
Paper-II (BCA-302)	Visual Programming and Programming in Visual Basic	3	75	25	100
Paper-III (BCA-303)	Web Technology II	3	75	25	100
Paper-IV (BCA-304)	Internet & E-Commerce	3	75	25	100
Practical-I (BCA-305)	Visual Programming Lab	3	150	50	200
Practical-II (BCA-306)	Web Technology Lab	3	150	50	200
Practical-II (BCA-307)	Project	3	150	50	200
	TOTAL		750	250	1000

## BCA 301: Software Engineering

**Time: 3 Hrs.**

**Max. Marks: 75**

### UNIT - I:

Introduction to Software Engineering: Definitions - Size Factors - Quality and Productivity Factors - Managerial Issues - Planning a software project : Defining the problem - Developing a Solution Strategy - Planning the Development Process - Planning an Organization structure - Other Planning Activities.

### UNIT - II:

Software Cost Estimation: Software cost factors - Software Cost Estimation Techniques - Staffing-level Estimation - Estimating Software Maintenance Costs - The Software Requirements Specification - Formal Specification Techniques - Languages and Processors for Requirements Specification.

### UNIT - III:

Software design: Fundamental Design Concepts - Modules and Modularization Criteria - Design Notations - Design Techniques - Detailed Design Considerations - Real-Time and Distributed System Design - Test Plans - Milestones, walkthroughs, and Inspections.

### UNIT - IV:

Implementation issues: Structured Coding Techniques - Coding Style - Standards and Guidelines - documentation guidelines -Type Checking - Scoping Rules - Concurrency Mechanisms.

### UNIT - V:

Quality Assurance - Walkthroughs and Inspections - Static Analysis - Symbolic Execution - Unit Testing and Debugging - System Testing - Formal Verification: Enhancing Maintainability during Development - Managerial Aspects of Software Maintenance - Source Code Metrics - Other Maintenance Tools and Techniques.

**Books for Study:**

1. R.Fairley, Software Engineering Concepts, Tata McGraw-Hill Edn. 1997.
2. R.SPressman, Software Engineering, Fourth Ed., McGraw Hill, 1997.

**BCA 302: Visual Programming and Programming in Visual Basic**

**Time: 3 Hrs.**

**Max. Marks: 75**

**UNIT I**

Client Server Basics: Discover Client-Server and Other Computing Architectures, Understand File Server Versus Client-Server Database Deployment, Learn About the Two Tier Versus Three Tire Client-Server Model, Visual Basic Building Blocks and Default Controls: Forms, Using

**Controls, Exploring Properties, Methods and Events, Introduction To Intrinsic Controls, Working**

With Text, Working With Choices, Special Purpose Controls, VB Advance Controls: Events, Menu bar, Popup Menus, Tool bar, Message Box, Input Box, Built-in Dialog Boxes, Creating MDI, Working with Menus

**UNIT II**

VB Programming Fundamentals and Variables: Introduction to Variables, Variable Declaration, Arrays, Introduction to Constants and Option Explicit Statement, Assignment Statements, Working With Math Operations, Strings, Formatting Functions, Controlling and Managing Program: All Control Statements, Loops, Error Trapping, Working With Procedures, Functions, Controlling How Your Program Starts, Common controls and control arrays: Introduction to common controls- Tree view, list view, tab strip, Creating and working with control arrays.

**UNIT III**

Visual Basic and databases: Understanding the Data Controls and Bound Controls, Introduction to Data Form Wizard, Introduce DAO, Working With Record sets, Record Pointer, Filters, Indexes, Sorts and Manipulation of Records. Remote and ActiveX Data Objects: Working With ODBC, Remote Data Objects and Remote data Control, Introducing ADO, ADO Data Control

**UNIT IV**

Using Data Grid Control and ActiveX Data Objects. ActiveX Controls, Extending ActiveX Controls And Classes: Creating, Testing, Compiling, Enhancing and User Drawn ActiveX Controls, Using ActiveX Control Interface Wizard and Property Pages Wizard, Introducing Ambient, Extender Objects, Creating Property Pages, Building Class Modules, ActiveX DLL.

**UNIT V**

Client-Server Development Tools: COM, Services Models, Development Tools Included with VB

6, Working With SourceSafe Projects. Reports and Packaging: Data Reports and Crystal Reports, Packaging A Standard EXE Project, VB and Internet: Introduction to VBScript, Tools used with VBScript and VBScript Languages, Introduction to Active Server Pages, ASP Objects.

References:

1. Gary Cornell - Visual Basic 6 from the Ground up - Tata McGraw Hill - 1999.
2. Noel Jerke - Visual Basic 6 (The Complete Reference) - Tata McGraw Hill - 1999.

## **BCA 303: Web Technology II**

**Time: 3 Hrs.**

**Max. Marks: 75**

### **UNIT-I**

C++ Vs JAVA, JAVA and Internet and WWW, JAVA support systems, JAVA environment. JAVA program structure, Tokens, Statements, JAVA virtual machine, Constant & Variables, Data Types, Declaration of Variables, Scope of Variables, Symbolic Constants, Type Casting. Operators : Arithmetic, Relational, Logical Assignments, Increment and Decrement, Conditional, Bitwise, Special, Expressions & its evaluation. If statement, if...else... statement, Nesting of if...else... statements, else...if Ladder, Switch,? operators, Loops – While, Do, For, Jumps in Loops, Labeled Loops.

### **UNIT-II**

Defining a Class, Adding Variables and Methods, 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.

### **UNIT-III**

Arrays: One Dimensional & two Dimensional, strings, Vectors, wrapper Classes, Defining Interface Extending Interface, Implementing Interface, Accessing Interface Variable, System Packages, Using System Package, Adding a Class to a Package, Hiding Classes.

### **UNIT-IV**

Creating Threads, Extending the Threads Class, Stopping and Blocking a Thread, Life Cycle of a Thread, Using Thread Methods, Thread Exceptions, Thread Priority, Synchronization, Implementing

### **UNIT-V**

Local and Remote Applets Vs Applications, Writing Applets, Applets Life Cycle, Creating an Executable Applet, Designing a Web Page, Applet Tag, Adding Applet to HTML File, Running the Applet, Passing Parameters to Applets, Aligning the Display, HTML Tags & Applets, Getting Input from the User.

### **TEXT & REFERENCE BOOKS:**

1. E. Balaguruswamy, *“Programming In Java”, 2nd Edition, TMH Publications* ISBN 0-07-463542-5
2. Peter Norton, *“Peter Norton Guide To Java Programming”, Techmedia Publications* ISBN 81-87105-61-5

## BCA 304 INTERNET & E-COMMERCE

Time: 3 Hrs.

Max. Marks: 75

### UNIT-I

Internet: Evolution, Concepts, Internet Vs Intranet, Growth of Internet, ISP, ISP in India, Types of connectivity - Dial-up, Leased line, DSL, Broadband, RF, VSAT etc., Methods of sharing of Internet connection, Use of Proxy server.

Internet Services – USENET, GOPHER, WAIS, ARCHIE and VERONICA, IRC

WORLD WIDE WEB (WWW) - History, Working, Web Browsers, Its functions, URLs, web sites, Domain names, Portals. Concept of Search Engines, Search engines types, searching the Web, Web Servers, TCP/IP and others main protocols used on the Web.

E-Mail: Concepts, POP and WEB Based E-mail, merits, address, Basics of Sending & Receiving, E-mail Protocols, Mailing List, Free E-mail services, e-mail servers and e-mail clients programs.

### UNIT-II

Concepts of Hypertext, HTML introduction, features, uses & versions Using various HTML tags, Elements of HTML syntax, Head & Body Sections, , Inserting texts, Text alignment, Using images in pages, Hyperlinks – text and images, bookmarks, Backgrounds and Color controls, creating and using Tables in HTML, and presentation, Use of font size & Attributes, List types and its tags.

Cascading Style sheets – defining and using simple CSS.

### UNIT-III

Introduction to WYSIWYG Design tools for HTML, Overview of MS FrontPage, Macromedia Dream weaver, and other popular HTML editors, designing web sites using MS FrontPage (using at least FrontPage 2000)

Use of Frames and Forms in web pages, Image editors, Issues in Web site creations & Maintenance, Web Hosting and publishing Concepts, Hosting considerations, Choosing Web servers – Linux Vs Windows Web servers, Choosing Domain names, Domain name Registration, Obtaining space on Server for Web site,

FTP software for upload web site. Add your website on search engines.

### UNIT-IV

Javascript Overview, Javascript and the WWW, Javascript vs. VBScript, Javascript vs. Java, Javascript versions, Script element,

Functions: Functions introduction, Calling functions, Javascript Comments, Variables: Variables overview, declaring variables, Types of variables, Casting variables, Alert box , Prompt & confirm.

Expressions: Arithmetic operators, Assignment operators, Logical operators, Expressions and precedence, Statements: If statement, For statement, While statement, Break/Continue

Creating arrays/event handlers, JavaScript Object model, Object and Events in JavaScript – OnClick, On MouseOver, On Focus, OnChange, OnLoad etc. Getting data with forms.

### UNIT-V

E - Commerce An introductions, Concepts, Advantages and disadvantages, Technology in E-Commerce, Internet & E-business, Applications, Feasibility & various constraints. E-transition challenges for Indian corporate, the Information Technology Act 2000 and its highlights related to e-commerce.

Electronic Payment Systems: Introduction, Types of Electronic Payment Systems, Digital Token-Based Electronic Payment Systems, Smart Cards and Electronic Payment Systems, Credit Card-Based Electronic Payment Systems, Risk and Electronic Payment Systems.

E-security – Security on the internet, network and web site risks for e-business, use of firewalls, secure physical infrastructure.

## **TEXT & REFERENCE BOOKS :**

1. *Frontiers of Electronic Commerce*, By- Kalakota, Ravi ; Stone, Tom ; Whinston, Andrew B, Addison Wesley Publishing Co , ISBN 8178080575
2. *E-Commerce An Indian Perspective (Second Edition)* – by P.T. Joseph, S.J. Prentice-Hall of India
3. *Internet & Web Design* By A. Mansoor, Pragma Publications.
4. *Learn HTML in a weekend* by Steven E. Callihan, PHI
5. *Using HTML* By Lee Anne Phillips, PHI
6. *SAMS Teach Yourself Javascript in 24 Hrs.* By Michael Moncur, TechMedia

## **Practical**

<b>Practical-I (BCA-305)</b>	<b>Visual Programming Lab</b>	<b>3</b>	<b>150</b>	<b>50</b>	<b>200</b>
<b>Practical-II (BCA-306)</b>	<b>Web Technology Lab</b>	<b>3</b>	<b>150</b>	<b>50</b>	<b>200</b>

## **BCA 307**

Project may be developed in any language taught in entire BCA 3 years course under the guidance of college faculty.