

Practical Syllabus of BCA

BCA Practical Syllabus

BCA-I Year (w.e.f. 2013-14)

Paper: BCA-131

Maximum Marks: 100

Examination Time: 6 Hrs

Session-I

Windows and PC Software

Windows : Introduction to Windows and its Features, Hardware Requirements of Windows. Windows Concepts, Windows Structure, Desktop, Taskbar, Start Menu, My Pictures, My Music, My Documents, Recycle Bin. Managing Files, Folders and Disk . My Computer, Windows Explorer and its Facilities, Using CD, DVD, Pen Drive, Burning CD. Windows Accessories. Entertainment- Media Players, Sound Recorder, Volume Control.

Advanced Features Of Windows:

Managing Hardware & Software - Installation of Hardware & Software, Using Scanner, Web Camera, Printers. System Tools - Backup, Character Map, Clipboard Viewer, Disk Defragmenter, Drive Space, Scandisk, System Information, System Monitor, Disk Cleanup, Using Windows Update. Browsing the Web with Internet Explorer, Multiple User Features of Windows, Creating and Deleting User, Changing User Password, etc. Accessibility Features of Windows - Sharing Folders and Drives, Browsing the Entire Network, Using Shared Printers. Control Panel & its components

Working With Spread Sheet:

Introduction and area of use, Working with Excel, Toolbars, Menus and Keyboard Shortcuts, concepts of Workbook & Worksheets, Using Wizards, Various Data Types, Using different features with Data, Cell and Texts, Inserting, Removing & Resizing of Columns & Rows, Working with Data & Ranges, Different Views of Worksheets, Column Freezing, Labels, Hiding, Splitting etc., Using different features with Data and Text, Cell Formatting including Borders & Shading.

Session-II

Office Automation Tools

Desktop Publishing: Concept, Need and Applications; Hardware and Software requirements for DTP, An Overview and comparison between DTP packages, Common features of DTP. Introduction to Page Maker: Features, System Requirements, Components of Page Maker Window, Introduction to Menu and Toolbars, PageMaker Preferences

Creating of Publications: Starting PageMaker, Setting Page size, Placing the text Formatting the text: Character Specification Paragraph setting: Paragraph Specification, Paragraph Rules, Spacing, Indents/Tabs, Define Styles, Hyphenation, Header & Footer, Page Numbering, Saving and Closing publication. Editing Publication: Open a publication, Story editor, Find and change the text, Change character and Paragraph attributes, spell checking, Selecting text, Cut, Copy, Paste, Pastemultiple, Working with columns

Word Processing: Introduction to Office Automation, Creating & Editing Document, Formatting Document, Auto-text, Autocorrect, Spelling and Grammar Tool, Document Dictionary, Page Formatting, Bookmark, Advance Features of Word-Mail Merge, Macros, Tables, File Management, Printing, Styles, linking and embedding object.



Presentation using PowerPoint: Presentations, Creating, Manipulating & Enhancing Slides, Organizational Charts, Excel Charts, Word Art, Layering art Objects, Animations and Sounds, Inserting Animated Pictures or Accessing through Object, Inserting Recorded Sound Effect or In-Built Sound Effect.

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Examination Time: 6 Hrs

Session-I

Programming in C

Overview of C: History of C, Importance of C, Structure of a C Program. Elements of C: C character set, identifiers and keywords, Data types, Constants and Variables, Assignment statement, Symbolic constant. Input/output: Unformatted & formatted I/O function in C, Input functions (scanf(), getch(), getche(), getchar(), gets()), Output functions (printf(), putchar(), puts()).

Operators & Expression: Arithmetic, relational, logical, bitwise, unary, assignment, conditional operators and special operators. Arithmetic expressions, evaluation of arithmetic expression, type casting and conversion, operator hierarchy & associativity. Decision making & branching: Decision making with IF statement, IF-ELSE statement, Nested IF statement, ELSE-IF ladder, switch statement, goto statement.

Decision making & looping: For, while, and do-while loop, jumps in loops, break, continue statement. Functions: Definition, prototype, passing parameters, recursion.

Storage classes in C: auto, extern, register and static storage class, their scope, storage, & lifetime. Arrays: Definition, types, initialization, processing an array, passing arrays to functions, Strings & arrays.

Session-II

Advanced Programming in C

Strings in 'C': Introduction, Declaration and initialization of string, String I/O, Array of strings, String manipulation functions: String length, copy, compare, concatenate, search for a substring. Structure and Union: Introduction, Features of structures, Declaration and initialization of structures, Structure within structure, Array of structures, Structure and functions. Union: Introduction, Union of structures. Typedef, Enumerations.

Pointers: Introduction, Pointer variables, Pointer operators, Pointer assignment, Pointer conversions, Pointer arithmetic, Pointer comparison, Pointers and arrays, Pointers and functions, Pointers and strings, Pointer to pointer, dynamic allocation using pointers.

Files: Introduction, File types, File operations, File I/O, Structure Read and write in a file, Errors in file handling, Random-access I/O in files.

Preprocessor: Introduction, #define, macros, macro versus functions, #include, Conditional compilation directives, undefining a macro. Command line arguments: defining and using command line arguments.




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BCA-II Year (w.e.f. 2014-15)

Paper: BCA-251

Maximum Marks: 100

Examination Time: 6 Hrs

Session-I

Object Oriented Programming Using 'C++'

Object oriented Programming: Object-Oriented programming features and benefits. Object-Oriented features of C++, Class and Objects, Data Hiding & Encapsulation, Structures, Data members and Member functions, Scope resolution operator and its significance, Static Data Members, Static member functions, Nested and Local Class, Accessing Members of Class and Structure.

Constructor, Initialization using constructor, types of constructor– Default, Parameterized & Copy Constructors, Constructor overloading, Default Values to Parameters, Destructors, Console I/O: Hierarchy of Console Stream Classes, Unformatted and Formatted I/O Operations.

Manipulators, Friend Function, Friend Class, Arrays, Array of Objects, Passing and Returning Objects to Functions, String Handling in C++, Dynamic Memory Management: Pointers, new and delete Operator, Array of Pointers to Objects, this Pointer, Passing Parameters to Functions by Reference & pointers.

Polymorphism: Operators in C++, Precedence and Associativity Rules, Operator Overloading, Unary & Binary Operators Overloading, Function Overloading, Inline Functions

Session-II

Dynamic Polymorphism: Function Overriding, Virtual Function and its Need, Pure Virtual Function, Abstract Class, Virtual Derivation, Virtual Destructor.

Type Conversion: Basic Type Conversion, Conversion between objects and basic types, Conversion between objects of different classes, Inheritance: Rules of Derivations – Private, Protected and Public Derivations.

Different Forms of Inheritance – Single, Multiple, Multilevel, Hierarchical and Multipath Inheritance Roles of Constructors and Destructors in Inheritance, Genericity in C++: Templates in C++, Function templates.

Class templates in C++, Exception Handling in C++: try, throw and catch, Files I/O in C++: Class Hierarchy for Files I/O, Text versus Binary Files, Opening and Closing Files, File Pointers, Operation on files.

BCA-252

Session-I

Data Structures

Introduction: Elementary data organization, Data Structure definition, Data type vs. data structure, Categories of data structures, Data structure operations, Applications of data structures, Algorithms complexity and time-space tradeoff, Big-O notation. Strings: Introduction, String strings, String operations, Pattern matching algorithms.

Arrays: Introduction, Linear arrays, Representation of linear array in memory, Traversal, Insertions, Deletion in an array, Multidimensional arrays, Parallel arrays, Sparse matrices. **Linked List: Introduction**, Array vs. linked list, Representation of linked lists in memory, Traversal, Insertion, Deletion, Searching in a linked list, Header linked list, Circular linked list, Two-way linked list, Garbage collection, Applications of linked lists. Algorithms for Insertion, deletion in array, Single linked list

Stack: Introduction, Array and linked representation of stacks, Operations on stacks, Applications of stacks: Polish notation, Recursion. **Queues:** Introduction, Array and linked



representation of queues, Operations on queues, Deques, Priority Queues, Applications of queues.

Tree: Introduction, Definition, Representing Binary tree in memory, Traversing binary trees, Traversal algorithms using stacks and using recursion. **Graph: Introduction**, Graph theory terminology, Sequential and linked representation of graphs.

Session-II

Advanced Data Structure

Tree: Introduction, Definition, Representing Binary tree in memory, Traversing binary trees, Traversal algorithms using stacks, Binary search trees: introduction, storage, Searching, Insertion and deletion in a Binary search tree, Huffman's algorithm, General trees.

Graph: Introduction, Graph theory terminology, Sequential and linked representation of graphs, operations on graphs, traversal algorithms in graphs and their implementation, Warshall's algorithm for shortest path, Dijkstra algorithm for shortest path.

Sorting: Internal & external sorting, Radix sort, Quick sort, Heap sort, Merge sort, Tournament sort, Comparison of various sorting and searching algorithms on the basis of their complexity.

Files: Introduction Attributes of a file, Classification of files, File operations, Comparison of various types of files, File organization: Sequential, Indexed-sequential, Random-access file. Hashing: Introduction, Collision resolution.



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Session-I

Web Designing Fundamentals

Introduction to Internet and World Wide Web; Evolution and History of World Wide Web; Basic Features; Web Browsers; Web Servers; Hypertext Transfer Protocol; URLs; Searching and Web- Casting Techniques; Search Engines and Search Tools

Steps for Developing Website; Choosing the Contents; Home Page; Domain Names; Internet Service Provider; Planning and Designing Web Site; Creating a Website; Web Publishing: Hosting Site;

Introduction to HTML; Hypertext and HTML; HTML Document Features; HTML Tags; Header, Title, Body, Paragraph, Ordered/Unordered Line, Creating Links; Headers; Text Styles; Text Structuring; Text Colors and Background; Formatting Text; Page layouts; Insertion of Text, Movement of Text

Images: Types of Images, Insertion of Image, Movement of Image, Ordered and Unordered lists; Inserting Graphics; Table Handling Functions like Columns, Rows, Width, Colours; Frame Creation and Layouts; Working with Forms and Menus; Working with Buttons like Radio, Check Box

Session-II

Web Designing Using Advanced Tools

Interactivity Tool - JavaScript: Introduction, Features, Data types, Operators, Statements, Functions, Event Handling, Use of Predefined Object and Methods, Frames, Windows, Tables, Images, Links

Interactivity Tool - VBScript: Introduction, Features, Variables, Data Types, Numeric and Literal Constants, Arrays, Operators, Subroutine Procedures, Function Procedures, Control Statements, Strings, Message and Input Boxes, Date and Time, Event Handlers, Embedding VBScript in HTML

Interactivity Tool - Active Script Pages – Introduction, Features, Client-Server Model, Data Types, Decision Making Statements, Control statements, Use of Various Objects of ASP, Various Techniques of Connecting to Database Other Interactivity Tools - Macromedia Flash, Macromedia Dreamweaver, PHP: Basic Introduction and Features

DHTML: Introduction, Features, Events, Dynamic Positioning, Layer Object, Properties of STYLE, Dynamic Styles, Inline Styles, Event Handlers; Cascading Style Sheets (CSS): Basic Concepts, Properties, Creating Style Sheets; Common Tasks with CSS: Text, Fonts, Margins, Links, Tables, Colors; Marquee; Mouseovers; Filters and Transitions; Adding Links; Adding Tables; Adding Forms; Adding Image and Sound; Use of CSS in HTML Documents Linking and Embedding of CSS in HTML Document

Microsoft FrontPage: Introduction, Features, Title Bar, Menu bar, FrontPage Tool Bar, Style, FontFace and Formatting Bar, Scroll Bars

XML: Introduction, Features, XML Support and Usage, Structure of XML Documents, Structures in XML, Creating Document Type Declarations, Flow Objects, Working with Text and Font, Color and Background Properties




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Session-I

Programming Using Visual

Introduction to VB: Visual & Non-Visual programming, Procedural, Object-Oriented, Object-Based and Event-Driven Programming Languages, VB as Event-Driven and Object-Based Language, VB Environment: Menu bar, Toolbar, Project explorer, Toolbox, Properties Window, Form Designer, Form Layout, Immediate window, Default Controls in Tool Box Visual Development and Event Driven programming

Basics of Programming: Variables: Declaring Variables, Types of variables, Converting Variables Types, User Defined Data Types, Forcing Variable Declaration, Scope & Lifetime of Variables. Constants: Named & Intrinsic, Operators: Arithmetic, Relational & Logical operators, Input/output in VB: Various Controls for I/O, Message box, Input Box, Print statement.

Decision Statements in VB - if statement, if-then-else, select-case; Looping Statements in VB: do-loop, for-next, while-wend; Exit statement, Nested Control Structure; Arrays: Declaring and using Arrays, One-dimensional, Two-dimensional and Multi-dimensional Arrays, Static and Dynamic arrays, Array of Arrays.

Procedures: General & Event Procedures, Subroutines, Functions, Calling Procedures, Arguments - Passing Mechanisms, Optional Arguments, Named Arguments, Functions Returning Custom Data Types Simple Program Development in VB such as Sum of Numbers, Greatest among Numbers, Checking Even/Odd Number, HCF of Two Numbers, Generate Prime Numbers, Generate Fibonacci Series, Factorial of a Number, Searching, Sorting,

Session-II

Advanced Programming with Visual

Collections: Adding, Removing, Counting, Returning Items in a Collection, Processing a Collection; Working with Forms: Form Properties, Creating, Adding, Removing Forms in Project, Adding Multiple Forms, Managing Forms at Run Time, Hiding & Showing Forms, Load & Unload Statements, Drag and Drop Operation, Activate & Deactivate events, Form-load event, Example using Forms, Programs in VB using Forms

Working with Menu: Menu Designing in VB, Adding a Menu to a Form, Modifying and Deleting Menu Items, Adding Access Characters, Adding Shortcut Keys, Manipulating Menus using Common Dialog Box, Attaching Code to Events, Creating Submenus, Dynamic Menu Appearance Advanced Controls in VB: Scroll Bar, Slider Control, Tree View, List View, Rich Text Box Control, Toolbar, Status Bar, Progress Bar, Cool bar, Image List Program Development in VB using Menus and Advance Controls

File Handling & File Controls: Sequential & Random files, Opening and Closing Data Files, Viewing the Data in a File, Performing Operations on a File, Creating a Sequential Data File, Writing Data to a Sequential File, Reading the Data in a Sequential File, Finding the End of a Data File, Locating a File, Reading and Writing a Random File (get, put, LOF, seek). Working with Graphics: Using Paint, Line, Circle, Manipulating Graphics Program Development in VB using Files and Graphics

Accessing Databases: Data Controls, Data-Bound Controls, DAO, RDO, ADO, Creating the Database, Setting Properties, Applying Operations on Database, Viewing the Database, Updating the Database (adding, deleting records) Program Development in VB using Database and Advance Controls



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SCHEME OF EXAMINATION FOR COMPUTER SCIENCE PRACTICAL


(2017-18)

Class	Paper	Syllabus	Max. Marks	Time
BCA-I Year	BCA-131 Lab-I	Windows and PC Software Office Automation Tools	100	3:Hours
	BCA-132 Lab – II	Programming in C Advanced Programming in C	100	3:Hours
BCA-II Year	BCA -251 Lab – I	ObjectOriented Programming Using C++ Advanced Programming using C++	100	3:Hours
	BCA -252 Lab – II	Data Structures Advanced Data Structures	100	3:Hours
BCA-III Year	BCA-371 Lab – I	Web Designing Fundamentals Web Designing Using Advanced Tools	100	3:Hours
	BCA-372 Lab – II	Programming Using Visual Basic Advanced Programming with Visual Basic	100	3:Hours

Candidates present in the examination

Examination	Allotted candidates	Present candidates	Absent candidates
BA computer Sc. Practical	8	7	1

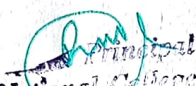



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Attendance Chart

Examination: B.C.A. IV Sem.
Date of Examination: 07 JUNE 2018
Subject: C++
Paper: BCA -251

Sr.No.	Roll No.	Marks in Figures
1	6007353	Present
2	6007358	Present


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Signature of Principal

I.G.N. COLLEGE LADWA

Total number of Candidates allowed by the Principal: 02
Total No. of Candidates examined by the Examiner: 02
Total no. of Candidates absent in the Practical Examination: Nil


Signature of Practical Examiner (Internal) 

I.G.N. COLLEGE LADWA


Attendance Chart

Examination on **B.C.A. IV Sem.**
Date of Examination on **07 JUNE 2018**
Subject: **DATA STRUCTURES**
Paper: **BCA -252**

Sr.No.	Roll No.	Marks in Figures
1	6007353	Present
2	6007358	Present


Total number of Candidates allowed by the Principal: 02
Total No. of Candidates examined by the Examiner: 02
Total no. of Candidates absent in the Practical Examination: Nil

Signature of Principal
I.G.N. COLLEGE LADWA

Signature of Practical Examiner (Internal) 
I.G.N. COLLEGE LADWA

Attendance Chart


Examination: **B.C.A. VI Sem.**
Date of Examination: **27 May 2018**
Subject: **Computer**
Paper: **BCA 371 WEB DESIGNING**

Sr. No.	Roll No.	Attendance
1	5007153	Present
2	5007155	Present
3	5007156	Absent
4	5007157	Present
5	5007159	Present
6	5007160	Present


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Total number of Candidates allotted by the Principal: **06**
Total No. of Candidates examined by the Examiner: **05**
Total no. of Candidates absent in the Practical Examination: **01**

Signature of Principal
I.G.N. COLLEGE LADWA

Signature of Practical Examiner (Internal) 
I.G.N. COLLEGE LADWA

Attendance Chart

Examination: **B.C.A. VI Sem.**
Date of Examination **27 May 2018**
Subject: **Computer**
Paper: **BCA-372 VB**

Sr. No.	Roll No.	Attendance
1	5007153	Present
2	5007155	Present
3	5007156	Absent
4	5007157	Present
5	5007159	Present
6	5007160	Present

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Signature of Principal

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Total number of Candidates allotted by the Principal: **06**
Total No. of Candidates examined by the Examiner: **05**
Total no. of Candidates absent in the Practical Examination: **01**

Signature of Practical Examiner

I.G.N. COLLEGE LADWA