(10 hrs)

Text books:

1. Aho Ullman & Hopkraft "Design & analysis of Algorithms".

2. Sara Baase, Allen Van Gelder, Computer Algorithms , Introduction to design and Analysis, 3rd edn (9th reprint), Pearson, 2005.

3. Design & Analys of alogorithm- Horowitz & Sahni 4. Fundamentals of Computer algorithm – Ellis Horowitz, Sartaj Sahni, Sanguthevar Rajasekaran.

References: 1. Berman : Algorithms , 1st Edition 2008, Cengage Learning India

BCA505T-Elective 1

Total Teaching Hours: 65   No. of Hours / Week: 05

BCA503P- JAVA PROGRAMMING LAB

BCA504P- ANALYSIS AND DESIGN OF ALGORITHM LAB

Part A 10 Programs

Part B

BCA505P-PROJECT

> The Project work should be carried out in groups. Each group shall not exceed three members.

SIXTH SEMISTER

BCA601T: SYSTEM PROGRAMMING

Total Teaching Hours: 65   No. of Hours / Week: 05

Unit - I   **13 Hours**

Background: Machine Structure, Evolution of the Components of a Programming System, Assembler, Loaders, Macros, Compliers, Formal Systems. Machine Structure, Machine Language and assembly language: General Machine Structure, Machine Language, Assembly Language

Unit - II   **13 Hours**

Assemblers: General Design Procedure, Design of assembler, Statement of Problem, Data structure, Format of databases, algorithm, look for modularity, Table Processing: Searching and Sorting. The Problem, Searching a table, linear Search, binary Search, Sorting, interchange sort, Shell Sort, Bucket Sort, Radix Exchange Sort, address calculation sort, comparison of sorts, hash or random entry searching.

Unit - III   **13 Hours**

MACRO LANGUAGE AND THE MACRO PROCESSOR: Macroinstruction, Features of macro Facility, Macro instruction arguments, conditional macro Expansion, macro calls within macros, macro Instructions defining macros, Implementation, Statement of problem, implementation of a restricted facility, A two pass algorithm. A single pass algorithm, implementation of macro calls within macros. Implementation within an assembles.

Unit – IV   **13 Hours**

LOADERS: Loader schemes, Compile & go, General loading Scheme, absolute loaders, Subroutine Languages, Relocating loaders, Direct linking loaders, other loading Schemes – Binders, linking loaders, Overlays, Dynamic binders. Design of absolute loader, Design of a Direct linking loader Specification of problem, Specification of data structure, format of data bases algorithm.

Unit - V   **13 Hours**

COMPILERS: Statement of problem, Problem1: Recognizing basic Elements, Problem2: Recognizing Syntactic cutis & interpreting meaning, Problem3: Storage Allocation, Problem4: Code Generation. Optimization (machine independent) optimization (machine dependent), Assembly Phase, General Model of complier. PHASES OF COMPILERS: Simple Structure of Compiler, Brief introduction to 7 Phases of Compliers.

BCA602T: PROFESSIONAL AND BUSINESS COMMUNICATION

Total Teaching Hours: 65   **No of Hours / Week: 05**

BCA603T: WEB PROGRAMMING

Total Teaching Hours: 52   **No of Hours / Week: 04**

Unit - I   **12 Hours**

Fundamentals of Web: Internet, WWW, Web Browsers, and Web Servers, URLs, MIME, HTTP, Security, The Web Programmers Toolbox. XHTML: Origins and evolution of HTML and XHTML, Basic syntax, Standard XHTML document structure, Basic text markup, Images, Hypertext Links, Lists, Tables.

Unit - II   **10 Hours**

HTML and XHTML: Forms, Frames in HTML and XHTML, Syntactic differences between HTML and XHTML. CSS: Introduction, Levels of style sheets, Style specification formats, Selector forms, Property value forms, Font properties, List properties, Color, Alignment of text, The Box model, Background images, The <span> and <div> tags, Conflict resolution.

Unit - III   **10 Hours**

Java Script: Overview of JavaScript; Object orientation and JavaScript; General syntactic characteristics; Primitives, Operations, and expressions; Screen output and keyboard input; Control statements; Object creation and Modification; Arrays; Functions; Constructor; Pattern matching using expressions; Errors in scripts; Examples.

Unit – IV   **10 Hours**

Java Script and HTML Documents: The JavaScript execution environment; The Document Object Model; Element access in JavaScript; Events and event handling; Handling events from the Body elements, Button elements, Text box and Password elements; The DOM 2 event model; The navigator object; DOM tree traversal and modification.

Unit - V   **10 Hours**

Dynamic Documents with JavaScript: Introduction to dynamic documents; Positioning elements; Moving elements; Element visibility; Changing colors and fonts; Dynamic content; Stacking elements; Locating the mouse cursor; Reacting to a mouse click; Slow movement of elements; Dragging and dropping elements. XML: Introduction; Syntax; Document structure; Document Type definitions; Namespaces; XML schemas; Displaying raw XML documents; Displaying XML documents with CSS; XSLT style sheets; XML Processors; Web services.

BCA604T: ELECTIVE-2

Total Teaching Hours: 65   No. of Hours / Week: 05

BCA605P: WEB PROGRAMMING LAB

1 Create a HTML form that has number of Textboxes. When the form runs in the Browser fill the textboxes with data. Write JavaScript code that verifies that all textboxes has been filled. If a textboxes has been left empty, popup an alert indicating which textbox has been left empty.

2 Develop a HTML Form, which accepts any Mathematical expression. Write JavaScript code to Evaluates the expression and Displays the result.

3 Create a page with dynamic effects. Write the code to include layers and basic animation.

4 Write a JavaScript code block using arrays and generate the current date in words, this should include the day, month and year.

5 Create a form for Student information. Write JavaScript code to find Total, Average, Result and Grade.

6 Create a form for Employee information. Write JavaScript code to find DA, HRA, PF, TAX, Gross pay, Deduction and Net pay.

7 Create a form consists of a two Multiple choice lists and one single choice list (a) The first multiple choice list, displays the Major dishes available (b) The second multiple choice list, displays the Starters available. (c)The single choice list, displays the Soft drinks available.

8 Create a web page using two image files, which switch between one another as the mouse pointer moves over the image. Use the on Mouse Over and on Mouse Out event handlers.

9 Write a program to convert lowercase string to uppercase string.

10 Write a program to validate username and password

11 Create a web page to display mouse position.

12 Write a program to replace string using regular expression.

PART – B

During practical examination the External and Internal examiners may prepare exam question paper related to theory syllabus apart from Part-A. (A minimum of 8 Programs has to be prepared).

Note:

a) The candidate has to write two the programs One from Part-A and other from Part-B and execute one program as of External examiner choice.

b) A minimum of 10 Programs has to be done in Part-B and has to be maintained in the Practical Record.

c) Scheme of Evaluation is as follows:

Writing two programs - 10 Marks
Execution of one program - 10 Marks
Formatting the Output - 05 Marks
Viva - 05 Marks
Record - 05 Marks
Total - 35 Marks

BCA605P: PROJECT WORK

Guidelines for Project Work

The objective of the project is to motivate students to work in emerging/latest technologies, help the students to develop their ability by applying theoretical knowledge and practical techniques to solve real life problems related to industry, academic and research field.

Students are expected to do planning, analysis, design, code and implementation of the project. The initiation of project should be with the project proposal. The Project work should be done in a group not more than two members.

The project carries 300 marks is distributed as follows:

* Internal Marks:100

(Note: Implemented project will be given full internal Marks)

* External Marks: 200

o Demonstration and Presentation 130 Marks
o Viva-voce 50 Marks
o Project Report 20 Marks