

UNIVERSITY OF KOTA, KOTA
B.Sc (IT) IIIrd Year 2013

1. Courses of Study and Examination

Paper	Paper Name	Duration of exam. (hours)	Max. Marks		Total
			University Exam.	Internal Assessment	
Paper-I (BIT-301)	Programming in Java	3	75	25	100
Paper-II (BIT-302)	Visual Programming and Programming in Visual Basic	3	75	25	100
Paper-III (BIT-303)	System Analysis & Design	3	75	25	100
Paper-IV (BIT-304)	Web Technology II	3	75	25	100
Paper-V (BIT-305)	Multimedia Tools & Applications	3	75	25	100
Practical-I (BIT-306)	Visual Programming Lab	3	150	50	200
Practical-II (BIT-307)	JAVA Lab	6	150	50	200
	TOTAL		675	225	900

BIT 301: Programming in Java

Time: 3 Hrs.

Max. Marks: 75

Unit - I:

Introduction to Java - Features of Java - Object Oriented Concepts - Lexical Issues - Data Types - Variables - Arrays - Operators - Control Statements.

Unit - II:

Classes - Objects - Constructors - Overloading method - Access Control - Static and fixed methods - Inner Classes - String Class - Inheritance - Overriding methods - Using super- Abstract class.

Unit - III:

Packages - Access Protection - Importing Packages - Interfaces - Exception Handling - Throw and Throws - Thread - Synchronization - Messaging - Runnable Interface - Inter thread Communication - Deadlock - Suspending, Resuming and stopping threads - Multithreading.

Unit - IV:

I/O Streams - File Streams - Applets - String Objects - String Buffer - Char Array - Java Utilities - Code Documentation.

Unit - V:

Networks basics - Socket Programming - Proxy Servers - TCP/IP Sockets - Net Address - URL - Datagrams - Working with windows using AWT Classes - AWT Controls - Layout Managers and Menus.

Books for Study:

1. Cay S.Horstmann, Gary Cornell - Core Java 2 Volume I - Fundamentals,5th Edn. PHI,2000.
2. P. Naughton and H. Schildt - Java2 (The Complete Reference) - Third Edition,TMH 1999.
3. K. Arnold and J. Gosling - The Java Programming Language - Second Edition, Addison Wesley, 1996.

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 Active X 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 Source Safe 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.

BIT-303 System Analysis & Design

Time: 3 Hrs.

Max. Marks: 75

UNIT-I

System Concept: Definition, Characteristics, Elements of system, Physical and abstract system, open and closed system, man-made information systems.

System Development Life Cycle: Various phases of system development, Considerations for system planning and control for system success.

System Planning: Base for planning a system, Dimensions of Planning.

UNIT-II

Initial Investigation: Determining users requirements and analysis, fact finding process and techniques.

Feasibility study: Determination of feasibility study, Technical, Operational & Economic Feasibilities, System performance constraints, and identification of system objectives, feasibility report.

Cost/Benefit Analysis: Data analysis, cost and benefit analysis of a new system. Categories determination and system proposal.

UNIT-III

Tools of structured Analysis: Logical and Physical models, context, diagram, data dictionary, data diagram, form driven methodology, IPO and HIPO charts, Gantt charts, system model, pseudo codes, Flow charts- system flow chart, run flow charts etc., decision tree, decision tables, data validation,

Input/ Output and Form Design: Input and output form design methodologies, menu, screen design, layout consideration.

UNIT-IV

Management standards– Systems analysis standards, Programming standards, Operating standards. Documentation standards –User Manual, system development manual, programming manual, programming specifications, operator manual.

System testing & quality: System testing and quality assurance, steps in system implementation and software maintenance.

System security: Data Security, Disaster/ recovery and ethics in system development, threat and risk analysis.

System audit.

UNIT-V

Organisation of EDP: Introduction. Job Responsibilities & duties of EDP Personnels- EDP manager, System Analyst, Programmers, Operators etc. Essential features in EDP Organization.

Selection of Data Processing Resources: purchase, lease, rent-advantages and disadvantages.

Hardware and software procurement – In-house purchase v/s hiring and lease.

Text & Reference Books:

⌚ *System Analysis & Design* by V K Jain, Dreamtech Press

⌚ *Modern System Analysis & Design* by A Hoffer, F George, S Valaciah Low Priced Edn. Pearson Education.

⌚ *Information Technology & Computer Applications*, by V.K.Kapoor, Sultan Chand & Sons, New Delhi

BIT 304: Web Technology II

Time: 3 Hrs.

Max. Marks: 75

Unit - I:

Internet Basic - Introduction to HTML - List - Creating Table - Linking document - Frames - Graphics to HTML Doc - Style sheet - Style sheet basic - Add style to document - Creating Style sheet rules - Style sheet properties - Font - Text - List - Color and background color - Box - Display properties.

Unit - II:

introduction to Javascript - Advantage of Javascript - Javascript Syntax - Datatype - Variable - Array - Operator and Expression - Looping Constructor - Function - Dialog box.

Unit - III:

Javascript document object model - Introduction - Object in HTML - Event Handling - Window Object - Document object - Browser Object - Form Object - Navigator object - Screen object - Built in Object - User defined object - Cookies.

Unit - IV:

ASP. NET Language Structure - Page Structure - Page event, Properties & Compiler Directives. HTML server controls - Anchor, Tables, Forms, Files. Basic Web server Controls - Label, Textbox, Button, Image, Links, Check & Radio button, Hyperlink. Data List Web Server Controls - Check box list, Radio button list, Drop down list, List box, Data grid, Repeater.

Unit - V:

Request and Response Objects, Cookies, Working with Data - OLEDB connection class, command class, transaction class, data adaptor class, data set class. Advanced Issues - Email, Application Issues, Working with ITS and page Directives, Error handling. Security- Authentication, IP Address, Secure by SSL & Client Certificates.

BOOKS For Study and Reference:

1. I. Bayross, Web Enable Commercial Application Development Using HTML, DHTML, Javascript, Perl CGI, BPB Publications, 2000
2. J. Jaworski, Mastering Javascript, BPB Publications, 1999
3. T. A. Powell, Complete Reference HTML (Third Edition), TMH, 2002
4. G. Buczek, ASP.NET Developers Guide, TMH, 2002

BIT 305: MULTIMEDIA TOOLS AND APPLICATIONS

Time: 3 Hrs.

Max. Marks: 75

UNIT-I

Multimedia: Needs and areas of use, Development platforms for multimedia – DOS, Windows, Linux. Identifying Multimedia elements – Text, Images, Sound, Animation and Video, Making simple multimedia with PowerPoint.

Text – Concepts of plain & formatted text, RTF & HTML texts, using common text preparation tools, Conversion to and from of various text formats, using standard software, Object Linking and

Embedding concept, Basics of font design, overview of some fonts editing and designing tools, Understanding & using various text effects.

Images – importance of graphics in multimedia, Vector and Raster graphics, image capturing methods – scanner, digital camera etc. various attributes of Images – size, color, depth etc, Various Image file format – BMP, DIB, EPS, CIF, PEX, PIC, JPG, TGA, PNG and TIF format – their features and limitations, graphic file formats conversions, processing images with common software tools such as Photoshop, Paint Shop pro, Corel draw etc..

UNIT-II

Sound: Sound and its Attributes, Mono V/s Stereo sound, Sound channels, Sound and its effect in multimedia, Analog V/s Digital sound, Basics of digital sounds-Sampling, Frequency, Sound Depth, Channels, Sound on PC, Sound standards on PC, Capturing and Editing sound on PC, Overview and using some sound recording, editing software. Overview of various sound file formats on PC – WAV, MP3, MP4, Ogg Vorbis etc.

Animation: Basics of animation, Principle and use of animation in multimedia, Effect of resolutions, pixel depth, Images size on quality and storage. Overview of 2-D and 3-D animation techniques and software- animation pro, 3D studio & Paint Shop pro animator. animations for the Web using GIF Animator and Flash.

UNIT-III

Video: Basics of Video – Analog and Digital Video, How to use video on PC. Introduction to graphics accelerator cards, DirectX Introduction to AV/DV and IEEE1394 cards , Digitization of analog video to digital video, Interlacing and non-interlacing, Brief note on various video standards – NTSC, PAL, SECAM, HDTV, Introduction to video capturing Media & instrument – Videodisk, DVCAM, Camcorder, Introduction to digital video compression techniques and various file formats – AVI, MPEG, MOV Real Video. Brief Introduction to video editing and movie making tools – Quick time, video for windows & Adobe premier.

UNIT-IV

Authoring tools for CD Based Multimedia: Type of multimedia authoring tools, key factors of selecting CD based multimedia authoring tools, Planning and distribution of a multimedia project. Multimedia development team & skills requirement, Stages in designing & producing multimedia products for CD, Testing of product, distribution of multimedia product, various formats of CD's and DVD's.

UNIT – V

Multimedia on the Web: Bandwidth relationship, broadband technologies, Text in the web – Dynamic and embedded font technology, Audio on the Web – Real Audio and MP3/MP4, Audio support in HTML, Graphics – HTML safe color palette, Interlaced V/s Non interlaced model, Graphics support in HTML, Image Map, Video on the Web – Streaming video, Real Video, MPEG and SMIL, Virtual Reality on the Web.

TEXT AND REFERENCE BOOKS :

- ① *Multimedia: Making It Work (4th Edition)* – by Tay Vaughan, Tata Mcgraw Hills.
- ① *Multimedia In Action* – James E Shuman – Vikas Publishing House.
- ① *Multimedia Basics – Volume – 1 Technology*, Andreas Holzinger, Firewall Media(Laxmi Publications Pvt. Ltd) New Delhi.