

Syllabus :- BCA Semester 5

Sr.No.	Subject	No. of Theory Lect.per week	No. of Practical Week
1	CS - 25 ADVANCED JAVA PROGRAMMING	4+1	6
2	CS - 26 PROGRAMMING WITH C#	4+1	6
3	CS - 27 NETWORK TECHNOLOGY AND ADMINISTRATION	4+1	
4	Practical		
5	Practical		

CS - 25 ADVANCED JAVA PROGRAMMING

No	Topics	Details	Marks
	The J2EE Platform	Introduction Enterprise Architecture styles Two - Tier Architecture Three Tier Architecture N - Tier Architecture Enterprise Architecture The J2EE Platform Introduction to J2EE APIs (Servlet, JSP, EJB, JMS, JavaMail, JSF, JNDI) Introduction to container Apache Tomcat as a Web Container J2EE 1.4 as an Application Server	10
2	Distributed Computing Using RMI	Introduction to RMI RMI Architecture Stubs and Skeleton	05
3	Database programming with JDBC	Introduction and Need for JDBC Database Drivers JDBC APIs for database Connectivity (Java. sql Package) Connection Statement Prepared statement Callable statement Result set Other JDBC APIs Database Meta Data Result Set Meta Data	15
4	Servlet Programming	Introduction to Servlets Servlets Implementation The servlet interface The Generic Servlet class The single thread Model interface The Http Servlet class Service() doGet() doPost() doDelete() doOption() doPut() doTrace() Servlet Exceptions The Servlet Exception class The unavailable Exception class Servlet Lifecycle Servlet Request and Response The Http Servlet Request interface	30

		<p> GetAttribute() setAttribute() getAttributeNames() getParameterNames() getParameterValues() getRemoteHost() getRemoteAddr() getCookies() getHeaders() getQueryString() getSession() The Http servlet Response Interface getWriter() getcontentType() addCookie() encodeURL() sendRedirect() setHeader() setStatus() Session Tracking Approaches URL Rewriting Hidden Form Fields Cookies Session API Session Tracking with Servlet API The Http Session interface GetAttribute() GetAttributeNames() GetCreationTime() GetId() GetlastAccessedTime() IsNew() RemoveAttribute() SetAttribute() setMaxInactiveinterval() invalidate() Servlet Collabration Request Dispatching with Request Dispatcher interface Forward() Include() Servoet Context The servlet Context interface getContext() getRequestDispatcher() getServerInfo() </p>	
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		getInitParameter() getInitParameterNames() getAttribute() setAttribute() removeAttribute()	
5	JSP Programming	Introduction to JSP JSP development Basic JSP LifeCycle JSP Elements Directive Elements Page Directive Include directive Scripting elements Declaration Scriptlets Expressions Action elements Standard action <jps : param> <jsp : include> <jsp : forward> <jsp : plugin> Comments and template data Scope of JSP variables Page Request Session Application Using implicit objects The request object The response object The out object The session object The config object The exception object The application object Handling Errors and Exception Dealing with exception in the page directive Dealing with exception in the Deployment Descriptor Adding exception handling in JSP pages Including and forwarding from JSP pages Include Action Forward Action	30
6	JSP Expression	EL Introduction	05

	Language	EL Implicit Objects EL Operators EL Functions	
7	JSP Standard Tag Library	JSTL Introduction core tags xml tags sql tags fmt tags Core tags <c : out> <c : set> <c : if> SQL tags <sql : query> <sql : update> Fmt tags <fmt : formatNumber> <fmt : formatDate>	05
			100

CS - 26 PROGRAMMING WITH C#

No	Topics	Details	Marks
1	Introduction	Introduction to visual studio 2008 Visual studio editions Visual studio IDE	05
2	C # Basics	Variables Constants Strings Data types Arrays Decision statements Loop statements Exception using try - catch - finally Name Space Class Object Struct	10
3	Inheritance	Inheriting a class Sealed class Overloading an operator Overloading a method Overloading an Indexer Creating an Interface Implementing an Interface Inheriting an Interface	10
4	Pointers and Delegates	Pointers Pointers to Arrays Pointers to Structures Delegate Declaring and Instantiating Delegate Multicast delegate Creating events Chaining events Firing an event	10
5	Threading in C#	Introduction Difference between process and thread The thread class Multithreading Thread Priorities Thread Synchronization	10
6	Collection and Generics	Understanding Collections ArrayList BitArray HashTable Queue SortedList Stack Generics	10

		Generic List Generic Stack Generic Queue Generic HashSet	
7	Reflection in C#	Reflection Why we need Reflection? Using Reflection Dynamic loading and reflection	05
8	Windows Forms and Control Programming	Windows Forms MsgBox DialogBox Handling Mouse Events Handling Key Events Basic Control Programming For Following Controls Button Label TextBox RichTextBox RadioButton CheckBox ListBox CheckedListBox ComboBox ListView TreeView ImageList PictureBox Panel GroupBox TabControl ScrollBar ToolTip NotifyIcon Timer ProgressBar	20
9	ADO.NET Programming	Architecture of ADO.NET Data Providers in ADO.NET Connection Command DataReader DataAdapter DataSet DataTable DataView DataColumn DataRow DataRelation	20

		DataReader DataGridView Control Introduction To LINQ Using LINQ to Dataset Example	
			100

CS - 27 NETWORK TECHNOLOGY AND ADMINISTRATION

No	Topics	Details	Marks
1	Introduction	<ul style="list-style-type: none">• Network concept• Network Services file service, print service, communication service, data base service, security service, application service• LAN, MAN, WAN• Network model peer - to - peer, client - server• Network Topologies bus, ring, star, mesh, token ring• Network Access Methods csma / cd, csma / ca, polling, token passing	10
2	Network Standards	<ul style="list-style-type: none">• De facto, de jure Standards• OSI reference model All Layers of OSI model with Devices working with them• SLIP & PPP	05
3	Transmission Media	<ul style="list-style-type: none">• Different Frequency Ranges• Transmission Cable Co - Axial Cable, Twisted Pair Cable, Fiber Optic Cable• Wireless Transmission Media Infrared, Laser, Radio, Microwave• Multiplexing FDM, TDM	10
4	Networking Devices and Routing	<ul style="list-style-type: none">• NIC(network interface card)• Modems including Synchronous & Asynchronous• Repeater	20

		<ul style="list-style-type: none"> • Hub Passive, Active, Intelligent • Bridge(Kernel Configuration, Enabling the Bridge) • Advanced Bridging(Reconstruct Traffic Flows, Span Ports, Private Interfaces, Sticky Interfaces, SNMP Monitoring) • Routing including Routers, Brouter Gateways(Kernel Configuration, Building a Router, Setting Up Static Routes, Routing Propagation, Multicast Routing, Routing in Mobile networks, Radio Trunk Systems. CTx And DECT systems, Packet Routing Services) • Switching Techniques Cricuit Switching, Message Switching, Packet Switching 	
5	Network Protocols	<ul style="list-style-type: none"> • Packets & Protocols • TCP / IP • Introduction : IPX / SPX • Introduction : Apple Talk, DLC, SMB • NetBIOS Names • L2CAP, RFCOMM Protocol • Service Discovery Protocol • Common Address 	20

		<p>Redundancy Protocol (CARP)</p> <ul style="list-style-type: none"> • Network Routing Protocol • Interior and Exterior Routing protocol • BGP - The internet protocol 	
6	IP Addressing	<ul style="list-style-type: none"> • IP Addressing • IP Address Classes • Subnetting, Superneting • Introduction to IPV6 	05
7	Windows Server 2003	<ul style="list-style-type: none"> • Installation & Configuration Active Directory(Domains, Trees, Forests) • Accounts(User, Group, Computer) • Monitoring Performance, N/W Traffic • Logging Events • MMC(Microsoft Management console) 	15
8	Network Security	<ul style="list-style-type: none"> • Network Security Fundamental • Security Paradigm • Security Principle - The CIA model • Policies, Standard, Procedures, Baselines, Guidelines • Security Model • Perimeter Security • Security in Layers • Security Wheels 	15
			100