



**T.Y. B.Sc.
INFORMATION TECHNOLOGY**

Sr. No.	Paper No.	Name of Paper	Total Marks
1	301	Data communication and networking	100
2	302	Java programming	100
3	303	Web application development using PHP	100
4	304	Web application development using ASP.Net	100
5	305	RDBMS & client server programming	100
6	306	Practical based on 302 & 303	100
7	307	Practical based on 304 & 305	100



T.Y. B.Sc. (I.T.)

Paper No: 301 – Data Communication and Networking

Total Marks: 100

Unit	Detail syllabus	Marks
1	Introduction & Transmission Media <ul style="list-style-type: none">• Overview Computer Network• Communication system & channel• Analog and Digital Data• Multiplexing• Twisted pair wire, Coaxial cable• Radio, VHF, Microwave, Infrared- Millimeter waves, fiber optic	20
2	Data Communication & Satellite Communication <ul style="list-style-type: none">• Basics of data link layer - framing, error control and flow control• Error detecting codes• Data link protocols - Unrestricted Simplex protocol, Simplex stop and wait protocol, Simplex protocol for noisy channel• Optical source, Propagation in fiber, light detector• Satellite link, Satellite communication, FDDI	20
3	Data Network and Data communication system <ul style="list-style-type: none">• Switching techniques, digital telephony• Routing Algorithms –shortest path routing, flooding, broadcast routing, multicast routing, ISDN• PABX, Facsimile(Fax)	20
4	Network Topology Architecture and Standard <ul style="list-style-type: none">• LAN , MAN, WAN and Network topology• OSI Model, TCP/IP-Reference model• IP Protocol, IP packet format, IP addressing.• Ethernet, token bus, Token ring, Fast Ethernet• Blue Tooth Overview, IEEE standard 802 for LAN & WAN• Tunneling and routing	20
5	Network protocol and Security <ul style="list-style-type: none">• DLP, X.25, ATM, TCP/IP• Elementary data link protocols• Sliding window protocol• Network security and cryptography, Public key algorithms• DNS (Domain Name system), E-Mail, Virtual Private network• Firewall, Internetworks, Basics of Repeaters, Hubs, Bridges, Switches, Routers, Gate Ways, Repeater, modem, hub, switches	20

Reference books:

1. Computer Network, Andrew S. Tanenbaum, Prentice Hall India Publication.
2. Data Communication and Networking, Dr. M. Jain & Satish Jain, BPB Publication.
3. Data Communications and Networking, Behrouz A. Forouzan, McGraw Hill.



Unit	Detail syllabus	Marks
1	Fundamentals of Java Programming <ul style="list-style-type: none">• History of Java, Basic OOP Concepts – Abstraction, Encapsulation, Inheritance, Polymorphism• Java Language Basics – Benefits, Applications, Byte Code, Buzzwords• Data types, Variables, Arrays• Operators, Control Statements, Command Line Arguments• Classes and Objects	20
2	Programming in Java <ul style="list-style-type: none">• Inheritance• Packages• Interfaces• Exception Handling• Multi Threading	20
3	Strings, Characters and I/O in Java <ul style="list-style-type: none">• String Class and its methods, String Buffer Class and its methods• Reading and Writing to console• Reading and Writing to Files (As Characters and Byte Streams)• Random Access File• Serialization	20
4	Java applet programming and Event Handling <ul style="list-style-type: none">• Types of Applets, Applet Architecture• An Applet Skeleton• Simple Applet Display Methods, Passing Parameters to Applets• Event Handling Mechanisms• The Delegation Event Model, Event Classes	20
5	AWT – Working with Windows, Graphics, Text and Controls <ul style="list-style-type: none">• AWT Classes• Windows Fundamental• Frame Windows, Frame Window in Applet• Graphics, color, Text output Using Font Metrics• Controls – Labels, Button, Check Box, Scroll bar, Text field and Text area	20

Reference books:

1. Compete Reference Java By Herbert Schildt Publisher: TMH
2. Programming in JAVA By E-Balaguruswami
3. JAVA PROGRAMMER'S REFERENCE by GRANT PALMER



T.Y. B.Sc. (I.T.)

Paper No: 303 – Web Application Development Using PHP

Total Marks: 100

Unit	Detail syllabus Teaching hours	Marks
1	Internet Fundamentals <ul style="list-style-type: none">• Internet, Intranet, Extranet• Internet Applications (WWW, E-mail, FTP, IRC, Web Chat, Newsgroup, UseNet, BBS, NetMeeting, Video Conferencing)• Email protocols (SMTP, POP3, IMAP)• Introduction to TCP/IP, DNS, MIME Types• Search Engines, Popular Search Engines and its working.	20
2	HTML, DHTML and Java Script <ul style="list-style-type: none">• Basic Of HTML Formatting of text, working with Image, Hyperlink, List, Tables and Frames, working with Form elements (Controls)• Java Script: Variable and Data Type Types of Operators Conditional Statements, Looping Statements• Array, Functions ,Events ,Message Box ,Objects Based Programming• Validation of form using JavaScript ,Different types of effects in designing using JavaScript	20
3	Basic PHP Programming <ul style="list-style-type: none">• Fundamentals of PHP Variables, Constants, Global variables Server Variables• Conditional Statements Looping Statements• Concept of array, Types of Arrays (Numeric, Associative, Multidimensional)• Super Global Variables, For each loop• Built-in functions (String, Mathematical, Date & Time, Array, etc)	20
4	Regular Expression <ul style="list-style-type: none">• Types of Regular Expressions, Functions used in Regular Expressions, Symbols used in Regular Expressions• Error Handling: Displaying Errors, Error Levels in PHP, Logging Errors, Ignoring Errors, Acting on Errors / Exceptions	20
5	Working with Forms <ul style="list-style-type: none">• PHP – MYSQL Architecture• Creating Forms of Different Web applications , Login Form• Uploading Files to Web Server.• Database Interaction (With My SQL): Data base creation and SQL queries• PHP-MySQL Architecture ,Creating & Connecting Database• Executing Commands on Database from the Front end• Small application development using PHP	20

Reference books:

1. Ivan Bayross, Sharanam Shah: PHP 5.1 For Beginners, Shroff Publishers & Distributors (SPD)
2. Janet Valade: PHP5 & MYSQL Projects, Wiley Dreamtech
3. Dave W. Mercer: Beginning PHP5, Wiley India Edition
4. Steven Holzner: The Complete Reference PHP, Tata McGRAW – HiLL, New Delhi
5. Web enable commercial application development using html, java script, dhtml, php, by Ivan bayross, bpb publication
6. Complite reference HTML & CSS, Thomas A. Powell, McGRAW – HiLL Publication



T.Y. B.Sc. (I.T.)

Paper No: 304 – Web Application Development Using ASP.Net

Total Marks: 100

Unit	Detail syllabus Teaching hours	Marks
1	Introduction <ul style="list-style-type: none">• Introduction of Visual Web Developer• Basics of Web Application Development• Introduction of Web-Forms• Advantage, Feature, New in ASP.Net 2.0, Page Life Cycle, Event Life Cycle, Global application class, Web configure file.• Basics Controls: Label,Text Boxes, Link Labels,Button, Image button, Link button, List box control, Place holder etc	20
2	Standard Controls <ul style="list-style-type: none">• Image Control, File upload• Drop Down Lists, Bulleted Listed, Checkbox, Radio Buttons• Hyper link, Tables Panels• Tree View Control and Menu• Sitemap Path control and Wizard Control	20
3	Advance Controls <ul style="list-style-type: none">• Required Field Validators, Range Validators, Regular Expression validators, Custom Validations, Validation Summary• Ad Rotators• Login Controls• HTML Controls• Master Pages and Themes	20
4	Working With Data Base <ul style="list-style-type: none">• Working MS-SQL-Server Database• Working With ADO.NET• Accessing Data with Sever Explores, Binding Data• Database programming using code• Working with data controls	20
5	Working With Ajax Controls and Web-Services <ul style="list-style-type: none">• Architecture of ASP.NET Ajax• Working with Ajax Controls (Script Manager, Update Panel, Timer, Accordion, AutoComplete, Calendar, FilteredTextbox• Introduction to Web-Services• Creating and Deploying web services• Small Application development	20

Reference books:

1. ASP.NET Black BOOK Published By Dreamtech Press
2. ASP.NET UNLEASHED By STEPHEN WALTHER
3. MASTERING ASP.NET WITH VB.NET by A. RUSSELL JONES



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Paper No: 305 – RDBMS & Client Server Programming

Total Marks: 100

Unit	Detail syllabus Teaching hours	Marks
1	An Overview Of DBMS & Introduction to RDBMS <ul style="list-style-type: none">• Introduction to DBMS & RDBMS.• Relational Database Structure, The object relational model.• E-R Diagram.• Client Server Architecture Distributed processing, Multi tier Architecture.• Code's Rules	20
2	Introduction to Oracle <ul style="list-style-type: none">• How oracle works.• Space Management, Memory Structure.• Oracle's process architecture.• Schema & Schema Object: Tables, Views, Sequences, Synonyms and Indexes.• Cluster & Hash Cluster.	20
3	SQL * Plus <ul style="list-style-type: none">• Introduce DDL, DML, DCL. & TCL• Oracle data types.• Types of integrity, integrity constraints.• Simple and advance query generation.• Create View, Sequence, index.	20
4	PL / SQL <ul style="list-style-type: none">• PL / SQL Blocks.• How PL / SQL works, Control structure.• Cursor: Declaring Cursor, Attributes of cursor, Accessing cursor, Closing cursor.• Trigger: Components of trigger, types of trigger, creating a trigger.• Stored Procedure & Function: Creating stored procedure, Executing stored procedure, Creating Function, Executing Function.	20
5	Introduction to DBA <ul style="list-style-type: none">• Role of DBA.• Users: Creating a new user, grant command, deleting user.• Privileges: System privileges, object privileges, Assigning object privileges to a user, Viewing User & privileges, revoking a system & an object privileges.• Role: Creating a role, Granting privileges & roles to a role, granting role to a user, viewing the role of a user.• Database Backup & Recovery and import-export utility	20

Reference books:

1. Learn Oracle 8i. By Jose A. Ramalho. Published by: BPB
2. SQL in 21-Days - Techmedia
3. PL/SQL in 21 Days - Techmedia
4. SQL, PL/SQL:THE PROGRAMMING LANGUAGE OF ORACLE By Evan Bayross



T.Y. B.Sc. (I.T.)

Paper No: 306 – Practical Based on 302 & 303

Total Marks: 100

No	Detail syllabus	Teaching hours	Marks/Weight
1	Paper No. 302 - Java Programming	15 weeks X 06 Hours = 90	50
2	Paper No. 303 - Web Application Development Using PHP	15 weeks X 06 Hours = 90	50

T.Y. B.Sc. (I.T.)

Paper No: 607 – Practical Based on 304 & 305

Total Marks: 100

No	Detail syllabus	Teaching hours	Marks/Weight
1	Paper No. 304 - Web Application Development Using ASP.Net	15 weeks X 06 Hours = 90	50
2	Paper No. 305 - RDBMS & Client Server Programming	15 weeks X 06 Hours = 90	50