

# Revised Syllabus and Course of Reading for Computer Studies (B.A/B.Sc. Examination)

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PAPER-A (100 Marks)

This paper will consist of Part-I and Part-II

Part-I      50 Marks

Part-II     50 Marks

PAPER-B (100 Marks)

This paper will consist of Part-I and Part-II

Part-I      50 Marks

Part-II     50 Marks

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Paper A (100 Marks)

Part-I: Introduction to Information Technology      (50 Marks)

Theory: 35 Marks

Practical: 15 Marks

**Theory:**

Overview of Computer Systems: uses, importance, future needs; Types of Computers: super, mainframe, mini, micro, desktop, notebook, personnel, and workstations.

Processing of Data: data and information, text codes. Parts of Computer: CPU, control unit, arithmetic unit, memory, ROM, RAM, flash technology, flash memory, cache

memory, computer clock, control bus, data bus, address bus, co-processors, types of microprocessor, Interacting with Compute: input devices, e.g. keyboard, keys arrangement on keyboard, mouse trackballs, touch pads pens, touch screens, barcode readers, etc.; output devices: monitors, types of monitors, resolution, refresh rate, dot pitch etc. Printers: types of printers, plotters. Storage Devices: floppy disk, hard disk, CD, tape disk, magnetic and optical storage. Types of Software: system software, shareware, and application software. Operating Systems: operating system and user interface, running programs, managing files, managing hardware, utility programs. Network and Data Communication: uses of network. Types of Network: LAN, WAN, File Server, Client/Server, peer-to-peer. Network Topologies: bus, star and ring. Network Media and Hardware, Network Software, Data Communication over Telephone Lines: modem, ISDN, T1, T3, and ATM. Internet: How does Internet works, backbones, gateways, addressing schemes. Features of Internet: email, news, telnet, FTP, gopher, chat, World Wide Web, online services. Accessing the Internet Application: connection through LAN, connection through modem, connection through high-speed lines.

### **Recommended Books**

- “Introduction to Computers” by Peter Norton
- “Discovering Computer 2003”, G.B. Shelly, T.J. Cashman and M.E. Vermatt
- “Introduction to Computer Science”, Scham's Series

### **Practical:**

#### **Windows 2000:**

1. Exploring Windows 2000 work place: desktop component and customizing them, exploring parts of a window, menu and dialog boxes, multitasking, and shutting down windows.
2. Working with the Accessories: calculator, notepad, wordpad, paint program, media player, etc. .
3. Organizing files and folders using window explorer.

4. Using Windows System Tools, Working with Control Panel, Installing new software and hardware.

5. Using Internet; working with Internet explorer, surfing with Internet explorer, working with e-mail

**Word 2000:**

1. Exploring Word 2000 work place: document, menus, toll bars, dialog boxes, and other icons

2. Saving and opening documents,

3. Editing and formatting text.

4. Formatting and printing documents

5. Working with tables and graphics

6. Working with Mail Merge and hyper links.

**Excel 2000:**

1. Exploring Excel 2000 work place: workbook, worksheet, menus, toll bars, dialog boxes, and other icons

2. Worksheet basic: entering data, editing worksheet, inserting & deleting cell, hiding data, copying data and auto fill.

3. Formatting and printing a worksheet.

4. Using functions in formulas.

5. Creating charts and adding graphics. ;

**Front Page 2000:**

1. Exploring Front Page environment.

2. Designing documents: working from Page View.

3. Developing the basic page: text, list, and hyperlinks, tables, frames.
4. Enhancing pages with graphics and multimedia
5. Publishing pages on the web.

**Recommended Books:**

1. "Microsoft Windows 2000 Professional: Comprehensive Course" by D. Busche and M. Bergerud(2001).
2. "Teach Yourself Microsoft Windows 2000 Professional" by B- Underdah.
3. "Microsoft Windows: millennium edition fast & easy" by D- Koers (2000).
4. "Microsoft Word 2000 Simplified" from maranGraphics, IDG Books (1999).
5. "Learn Word 2000" by J. Preston, S. Preston, and R. Ferrett (1999).
6. "Excel for Windows 2000" by M. Langer (1999).
7. "Microsoft Excel 2000: Comprehensive Course" by H. A. Napier and .P. J. Judd
8. "Using Frontpage 2000: special edition" by N. Randall and D- Jones (1999).
9. "Mastering Frontpage 2000" by D. A. Tauber & et. al. (2001).

PAPER-A

PART-B: COMPUTER PROGRAMMING (50 Marks)

Theory: 35 Marks

Tool: Visual  
Basic  
Practical: 15 Marks

### **Theory:**

Introductory Programming Concept: problem solving, algorithms, and pseudo code. Programming Techniques: visual programming, event driven programming, object oriented programming, structured programming. Visual Basic Integrated Development Environment. Control Elements. Data Types. Variables and Assignment Statements. Arithmetic Operators and Scope: data conversions, expressions, variable scope, declaring form and project variables and constants. Modules and Procedures: sub-procedures, event procedures, function procedures, and optional argument. Branching and Looping; relational operators and logical expressions, logical operators, If-then-Else, Case, For-Next, Looping with Do and While loop; Menu and Dialog Boxes; Arrays Searching and Sorting: what is array, declaring arrays, using arrays, control arrays, enumerations user defined types. Error Handling. Sequential Files: file details, file operators, add report to programs, programming with fixed report length. Introductory database programming: why use database, data control, and creating data-bound controls.

### **Recommended Books:**

1. "Computer programming with Visual Basic 6" by Alka R.Harriger, Susan K Lisack
2. " Visual Basic 6: How To Program" by Deitel, Deitel and Nieto Prentice-Hall.
3. "Visual Basic" by B. S. Gottfried (2001) Schaum's outlines.
4. "Using Visual Basic (Special Edition)", by Brian Siler and Jeff Spotts

### **Practical:**

Students must implement the concepts studied in theory part. For practice see examples given in "Computer programming with Visual Basic 6" by A. R.Harriger, S, K Lisack Mid" Visual Basic 6: How To Program" by Deitel, Deitel and Nieto. Some practical examples As guide line are given below:

1. Test if a given integer is odd or even.
2. Given the sides of a triangle, determine the type of the triangle.
3. Print integers in the specified range; make every alternate integer in the output negative.
4. Print leap years in a given century.
5. Given two strings, count the number of times the second string appears in the first string.
- G. Create a Program that convert Fahrenheit temperature to the Celsius scale and back again,
7. Search for a given name in an array of names.
- S. Reverse an array.
9. Reverse a given string.
10. Build a scientific calculator. ;

### **PAPER-B (100 Marks)**

PART-I: Database Management Systems (50 Marks)

Theory: 35 Marks

Practical: 15 Marks

**Theory:**

Introduction to Database Processing: relationship of application programs and the DBMS, file-processing systems, database processing systems, history of database processing, Database Development: database and DBMS, creating a database, components of database applications, database development processes. Entity-Relationship Modeling. Semantic Object Model. Relational Model and Normalization; Relational model, normalization –1 st to 5 th normal forms, domain/key normal form, synthesis of relations, multivalued dependencies. Iteration 2, Database Design Using Entity-Relationship Models: transformation of entity-relationship models into relational database designs. Database Design with Semantic Object Models: transformation of semantic objects into relational database designs. Database Application Design: characteristics of database applications, form design, report design, application program design. Foundations of Relational Implementation: defining relational data, relational data manipulation. Structured Query Language: querying a single table, querying multiple tables, exists and not exists, changing data. Relational Implementation for Personal Databases: creating the database schema, creating forms, creating reports. Client-Server database systems: client-server architecture, reliability and security, open (database connectivity (ODBC) standards, applications of ODBC in client-server systems.

### **Recommended Books:**

1. "Data Base Processing", Sixth Edition By David M. Kroenke (1998)
2. "Database Systems", by C.M, Ricardo
- 3- "Fundamental of Database Management Systems", by R. Elmars and S.B. Navathe :
4. "Fundamental of Database Systems" by C. J. Date

### **Practical:**

1. Exploring Access 2000 work place: opening access applications, menus, toll bars, other components.
2. Designing and creating a database

3. Entering and editing data into tables. I
4. Designing and using basic forms.
5. Integrating Access with other Microsoft Office applications and Internet.
6. Establishing Relationships between tables.
7. Finding, sorting and filtering information. .
8. Creating basic queries.
9. Designing and using basic reports. ;
10. Creating and using data access Pages
11. Creating action queries
12. Designing advanced queries,

**Recommended Book:**

"Microsoft Access 2000: Comprehensive Course" by H. A. Napier & P. J. J (2001)

**PAPER-B**

PART-II: Operating Systems and Networks (50 Marks)

Theory: 35 Marks

Practical: 15 Marks

**Theory:**

Introduction to Operating Systems: Types of operating systems, operating systems modes. Process Management; process scheduling, process state, scheduling criteria,

process supervisor calls. Inter-process Communication and Synchronization: inter process communication, deadlock, deadlock presentation, deadlock avoidance, deadlock

detection, recovery from deadlock. Memory Management: simple absolute partition, single relocateable partition, multiprogramming, multi partitions, simple paging, simple segmentation, segmentation with paging, page and segment table, swapping, overlaying, Virtual Memory: demand paging, segmentation. File Systems Management: directories

and names, types of file systems objects, file system functions, information types, file system architecture. Device Management; hardware I/O organization, software organization, devices. Security; authentication, prevention, detection, correction, identification, threat categories, program threats. Networking Basic Concepts; line configuration, topologies, transmission modes, categories of network, internetwork. The OSI Model: layered architecture, functions of

the layers, TCP/IP protocols suite. Transmission Media; twisted-pair, coaxial cable, optical fiber,.

### **Recommended Books:**

"Operating Systems" by J. A. Main's (Schaum's outlines) 2002.

"Data Communications and Networking" by B. A. Forouzan, 2 nd edition.

### **Practical:**

1. Installation of Windows 2000 Professional; Installation from CD, Installation from Network.

2. Configuring the Windows 2000 Environment; Control Panel, Management Console, Installing New Hardware

3. Managing the Desktop: Desktop Settings, Accessibility Features, Local Settings. :

4. Managing Users: Creating Users, Disabling User Account, Deleting User Account, Renaming User, Changing Password, Managing User Properties.

5. Managing Groups; Creating Groups, Group Membership, Renaming Group, Deleting Group, Local Group Policies.

6. User Profiles and Hardware Profiles: Local User Profiles, Roaming Profiles. Mandatory Profiles, Managing Hardware Profiles.

7. Managing Disks: File Systems, File System Conversions, Disk Storage. Disk Management Utilities.

8. Files and Printing Management; File and Folder Basic Management, Creating Shares; Share Permissions, Managing Printer Properties, Sharing Printer, Printer Permissions

9. Managing Network Connections: Network Dataflow, OSI Model Layer, Installation and Configuration of Network Adaptor, Installing and Configuring Network Protocols

10. Dialup Networking and Internet Connectivity: Configuring General Modem Properties, Running Modem Diagnostics, Configuring Advanced Modem Properties

11. Managing System Recovery Functions: Recovery and Backup, Using Backup Utility, Using Restore Wizard.

### **Recommended Books:**

"Windows 2000 Professionals Study Guide" by Lisa Donald (2001)