

**Tilak Maharashtra University**  
**Bachelor of Computer Applications**  
**First Year**

**Examination 1**

**121 - Computer Fundamentals**

**Computer Fundamental**

**UNIT-1**

- Input Unit
- Output Unit
- Storage Unit
- Arithmetic Logic Unit
- Control Unit
- Central Processing Unit
- System Concept
- Memory Management

**UNIT-2**

- Non-positional Number System
- Positional Number System
- Binary Number System
- Octal Number System
- Hexadecimal Number System
- Converting from one number system to another
- Converting from another base to decimal
- Converting from decimal to another base
- Converting from a base other than 10 to another base other than 10
- Shortcut Methods for binary to octal conversion
- Shortcut method for Octal to binary
- Shortcut Method for Binary to hexadecimal
- Shortcut Method for hexadecimal to Binary
- Conversion examples

**UNIT-3**

- Boolean algebra
- Logic Gates
- AND,OR,NOT,NAND,NOR Gate
- Logic circuits
- Converting expression to logic circuit
- Universal NAND gate
- Universal NOR gate
- Exclusive OR and equivalence function
- Design of combinational circuit
- Design of Half- adder
- Design of Full- Adder

# Examination 2

## UNIT-4

- Planning the computer programme
- Algorithm
- Flowcharts
- Symbols, Rules, Levels, Sample
- Advantages and limitations of FlowCharts
- Pseudo code
- Examples of Pseudo code and Algorithms

## UNIT-5

- Process Management
- Multi-programming
- Multi-Tasking
- Multi-Threading
- Multi-Processing
- Time Sharing
- Memory Management
- File Management

## UNIT-6

- Some popular operating Systems
- UNIX
- MS-DOS
- Windows XP
- Windows Vista
- Linux

## Reference Books

- Computer fundamentals - P.K. Sinha
- Computer fundamentals - D.P. Nagpal
- Computer fundamentals - B.Ram
- Fundamental of computer- V. Rajaraman.  
B.Ram
- Fundamental of computer- V. Rajaraman.

# Examination 1

## 122 - Mathematics and Statistics

### Part I. Mathematics

#### SET THEORY

Set concept, Subset, Union and Intersection, Complement of a Set, Universal set and De Morgan's Law

#### INTRODUCTION TO STATISTICS

Importance of statistics, scope of statistics in industry Economics, social sciences, management's sciences

#### STATISTICAL DATA

Types, variable, raw data attributes primary and secondary data, Graphical representation of data, histogram, frequency, polygon, Ogive curves, and diagrammatic representation of data. Simple bar diagram, subdivided bar diagram, pie diagram.

#### FUNCTION

Number System, Preliminary Concepts, Types of Functions and Relations

#### SEQUENCES, SERIES AND PROGRESSION

Arithmetic progression, geometric progression, numeric progression, means numerical problems, Arithmetic, geometric, finite and infinite series

#### PERMUTATIONS AND COMBINATIONS

Fundamental principles, permutations, combinations, Simple Relations, numerical problems

# Examination 2

#### LINEAR EQUATIONS

Determinants, Matrices, Types of matrices  
Linear Homogeneous and Linear non-homogeneous equations

#### MEASURES OF CENTRAL TENDENCY

Concepts of central tendency of data, arithmetic mean, median, mode, Effects of change of origin scale on mean, numerical problems.

#### QUADRATIC EQUATIONS

Formation of equations, Roles nature of roots of quadratic, equation, complex, numbers

#### PROBABILITY

Theorems, Probability, Conditional Probability, Events and Probability Model

#### BINARY SYSTEMS

Binary digits, bit, byte, Binary Operations, Boolean relations  
Diagrams interrelation with Boolean, matrix and Diagraphs

## MEASURES OF DISPERSION

Measures of dispersion absolute and relative measure of depression, Range, mean, variance, standard deviation coefficient of variation. Numerical problems.

## CORRELATION

## INDEX NUMBERS

## MATHEMATICAL LOGIC

### Reference Books:

**Mathematics and Statistics:** M. L. Vaidya, M. K. Kelkar  
**Statistical Analysis:** A Computer Oriented Approach  
**Introduction to Mathematical Statistics**  
**Introduction to calculus of finite differences:** Richardson C.

### Note:

- ✓ Following points has been **truncated** from the respective chapters:
  - **Mathematics:**
    - ❖ **Chapter 2 : Functions**
      - 2.6 Inverse of a function
    - ❖ **Chapter 3 : Sequences, Progressions and Series**
      - 3.5 Harmonic progression (H.P)
      - 3.7 Series
        - 3.7.1 Standard Series
        - 3.7.2 Infinite Geometric Series
    - ❖ **Chapter 7 : Probability**
      - 7.4 Conditional Probability
      - 7.5 Independent events
      - 7.6 probability Model
  - **Statistics:**
    - ❖ **Chapter 5: Measures of Skewness**
    - ❖ **Chapter 7: Bivariate Data**

Has been truncated from the syllabus of Statistics
- ✓ **Whole Chapter of Binary System has been modified with new contents.**  
Chapter 8 : Binary systems  
Conversions: Decimals to Binary, Binary to decimals and octal.
- ✓ **One new Chapter has been added to syllabus which is as follows :**
  - ❖ Chapter 9 : Logic Truth Tables-AND, OR, NOT

## **Examination 1**

### **SECTION – I**

#### **1. Grammar**

- Use of Articles and Prepositions
- Tense
- Transformation of Sentences
- Parts of Speech
- Idioms and Phrases
- Vocabulary
  - a) Synonyms
  - b) Antonyms
  - c) One Word Substitution
  - d) Homophones & Homonyms
- Punctuations
- Common Errors
- Spelling in English

## **Examination 2**

### **SECTION – II**

#### **2. Composition**

- Formal & Informal Writing
- Precis
- Essay Writing
- Report Writing
- Reading Comprehension

## 124 - Office Automation

# Examination 1

### I. Microsoft word (Elements of Word Processing)

#### 1. Word Processing Basic

An Introduction to Word process and its advantages, The word screen, Introduction to Title Bar, Menu Bar, Standard tool bar, ruler, scroll bar, how to use help?

#### 2. Entering, Editing Text and inserting picture in document

Creating a new document, character formatting keyboard short cuts moving copying text, find function, replace function auto correct, formatting text (using font command change font, size, color and style), document checking tools-use fo spell and grammar check Inserting picture from clipart, file, inserting auto-shapes and word art.

#### 3. Managing Files

opening an existing file, saving tabs with tabs dialog box, setting a tab with the ruler Bulleted numbered and multilevel list , Borders and shading.

#### 4. Paragraph formatting

paragraph dialog box-indentation, paragraph spacing, aligning tex, controlling page breaks. Tabs-setting tabs with tabs dialog box setting a tab with the rule Bulleted numbered and multilevel lists, Borders and shading.

#### 5. Tables

Creating tables using table menu-moving around the table, selecting part of tables. Modifying tables- adding cells, rows and columns deleting cells, rows and columns, moving cells, , rows and columns, changing the size of tables (row height and columns width). Formatting tables-text, splitting tables, merging and splitting cells, applying borders and shadings

#### 6. Printing Word Document

Different types of page views-normal.. Online layout, outline, page layout, master document, print preview and full screen. Page setup- creating and positioning headers and footers deleting and editing headers and footers, Page numbering - insertion and removing page numbering, footnotes and end notes- inserting , viewing, customizing, deleting, moving and copying footnotes and notes. Setting of margins.

#### 7. Introduction to mail-merge, macros and graphs

### II. Microsoft Excel(Spread Sheet)

#### 1. Introduction of Spreadsheet.

Elements of Electronic Spread Sheet, Application/usage of Electronic spreadsheet Elements of the screen, working with the full screen, difference between workbook and worksheet entering text into cell Moving around worksheet using keyboard, mouse Edit- go and formula bar. Moving between worksheets-selecting cells with mouse.

#### 2. Crating and Editing Simple Spread Sheet

entering and editing data, rules for arithmetic operations. Inputting and formatting the numbers, adjusting the column and row width, renaming a worksheet, moving inserting, hiding and unhiding and deleting sheets, Copying and moving cells.

3. Formatting worksheet

use of format menu, formatting toolbar and auto format. Alignment and orientation Fonts, font styles and sizes, Cell borders, Background colors and patterns.

4. Managing workbook files

use of save, save as, close, exit, open, find file and file new from file menu.

5. Cell referencing

advantages of relative referencing, need for absolute mix referencing. Naming cell ranges, rules for names.

6. Formulas and Functions

use of functions like sum(), max, medium, average etc. more features of auto sum. The function wizard, use of lookup function, if function and nested functions.

7. Charts and Graphs

creating embedded charts and chart sheets, use of series function, plotting non-adjacent cell ranges, formatting charts, adding extra text of chart.

## Examination 2

### III. Power Point Presentation:

1. Making Small Presentations

Difference between presentation and document, Opening a Power Point Presentation. Using Wizard for crating a presentation.

2. Crating a Presentation

Selection of type of Slides, Importing text from word documents. Title, text Creation, Font and sizes. Bullets and Indenting, Moving to Next Slide. Use slide sorter, Title Sorter,

3. Formatting and printing your Presentation.

Use of Slide manger, Change Background and Text colors, making your own slide format, adding of animation, Footnotes and slide numbering, Slide Manipulation and Slide Show, Printing the Slides and Handouts.

### IV. MS ACCESS

1. Introduction to DBMS and RDBMS.

introduction to relationships and types of relationship. Purpose to use DBMS and RDBMS.

2. Introduction to Access.

Starting access, opening existing database, why store data? You can use table to store data, why use multiple tables.

3. Creating Database

introduction, database is not a table, creating blank database, creating database with wizard, changing database properties, about sample databases.

4. Crating Tables

Create tables I Access (via design view, wizard), Introduction to data types and field properties, setting primary key, define indexes, about lookup, to set relationship between two or more tables. Types of relationships. How it works, saving switching between design and datasheet view

5. Adding, Editing and Viewing Data

saving record, deleting data/record, copying, moving data, sorting data, quick & easy sorting sorts within sorts, replacing data in multiple records, filtering out unwanted records, using advanced filter/sort, specifying criteria and/or criteria, saving filter as query.

6. Introduction to Query.

What is query? Why to use query? Introduction to design query (via design view, wizard), different types of queries (select, update, append, delete), introduction to sql-query, how to use criteria in query? Running action query.

7. Form Design.

Designing form through design view, wizard, Introduction to field list, properties box, toolbox Form design using properties box.

8. Report Design.

Report Design-through wizard, design view, setting report properties.

**Reference books**

- |    |                                 |                 |
|----|---------------------------------|-----------------|
| a  | Push button guide to Ms-Office- | Artken Pitter   |
| b  | Office 2000 complete-           | BPB Publication |
| c. | Pc software's-                  | Taxali          |

## 125 - Financial Accounting and Cost Accounting

# Examination 1

1. **Accounting concepts and principles**
  - a. Introduction
  - b. Accounting Concepts
2. **Basic Rules of accounting**
  - a. Types of accounts & rules of accounting.
3. **Journal Entries**
  - a. Journal Book format
  - b. How to pass entries in journal books
  - c. Transactions for journal entries
4. **Subsidiary Books & Cash Book**

Sales Register, Purchase register, Petty Cash Book, and Cash Book.
5. **Final Accounts**
  - a. Trial Balance
  - b. Trading Account
  - c. Profit & loss A/c
  - d. Problems on Final Accounts
6. **Bank Reconciliation [for theory only]**
  - a. Meaning
  - b. Reasons for getting difference in pass book and cash book

# Examination 2

7. **Depreciation and Reserve Funds**

Various Methods & Calculations- Fixed Installment methods, written down value method (WDV), Insurance policy Method, Depreciation Fund Method
8. **Inventory Valuation**

Various Methods-LIFO, FIFO, Average, Standard
9. **Need for cost and management accounting**
  - a. Introduction to costing and some concepts
10. **Elements of cost and analysis of cost**
  - a. Various elements of costs
11. **Cost sheet.**
  - a. Cost sheet format
  - b. Problems on cost sheet

## **Marks Distribution**

### **Unit Test 1** (after 1 to 1.5 month)

Topics-

- ✓ Introduction to accounting and Journal entries
- ✓ Final accounts

### **Unit Test 2** (after 2 to 3.5 months)

Topics-

- ✓ Cost concepts
- ✓ Cost sheet

### **Reference Books:**

Refer to SIM for financial accounting and computerized accounting with tally

Other accounts books for 11<sup>th</sup> standard B.Com.

And for Introduction to costing. 2<sup>nd</sup> year B.com

## 126 - Tally (Practical)

### **Create company in tally**

- ✓ How to create company in tally, shot keys..
- ✓ Introduction to software.

### **Groups & ledgers in tally**

- ✓ Groups-28 groups in tally & its explanation,
- ✓ Difference between groups & ledgers
- ✓ How to create groups & ledgers in tally

### **F11 & F12 features in tally**

- ✓ Complete explanation of F11 & F12 features in tally
- ✓ Its importance & difference between the same.

### **Voucher entries in tally**

- ✓ Types of Vouchers in tally, its uses with example.

### **Bank Reconciliation**

- ✓ Definition, meaning of Bank reconciliation
- ✓ Reasons to get difference in Pass Book & cash book
- ✓ Bank reconciliation with tally

### **Bill-wise details in tally**

- ✓ How we can maintain bill-wise details in tally
- ✓ Outstanding report after maintaining bill-wise details

### **Interest calculations in tally**

- ✓ How to activate interest calculation in tally

### **Reporting**

- ✓ How to generate Financial Reports in tally...  
likewise. Balance sheet, cash flow,  
funds flow, group summary, ... etc
- ✓ MIS Reports like.. Ratio Analysis

### **Key combinations**

### **Shot keys to work fast in tally.**

### **Tally Inventory**

- ✓ Inventory groups, Items, categories..
- ✓ Unit of measure, Godown creation
- ✓ Example for understanding
- ✓ Inventory Vouchers

### **Cost-Centers in tally**

- ✓ How to activate cost –centers in tally

- ✓ Example for better understanding
- ✓ How to generate reports

### **Budgetary control**

- ✓ What is budgetary control
- ✓ How it is important for management
- ✓ How to make budget in tally and see variance

### **Export & Import of data from tally**

- ✓ How to Import data from tally to tally
- ✓ How to Export data from tally to other applications

### **Backups, Restore, Printing Reports & tally security (P)**

### **Introduction to VAT**

- ✓ General introduction to VAT
- ✓ How tally facilitates to calculate VAT

## **127 - Practical Paper (Ms-Office)**

### **I Microsoft Word**

Create word document (Use all formatting and editing tools)

Paragraph formatting & Bullets and numbering.

Create tables in document

Mail-merge, macro & graphs.

### **II Microsoft Excel**

1. Create simple worksheet

2. Cell referencing

3. Formatting worksheets

Formulas & functions

Prepare graphs and charts, formatting of graphs and charts

### **III Microsoft Power Point**

Prepare a small presentation through wizard

Prepare your own presentation (use different slides)

Formatting your presentation (use Background and slide colors Footnotes, slide numbering, date and time)

Link different slides

Slide manipulation-

Animation sound effects, linking of slides

Slide manipulation through slide sorter, title sorter

Presentation of slides (slide show)

Printing slides and handouts.

### **IV Microsoft Access**

Create table-(using wizard, design view :-)

Add and edit data (sort, filter)

Create relationship [between tables

Create forms (using wizard and design view)

Create report (using wizard and design view)

Queries (Different types of queries)