Vocational Curriculum – 2012
(With effect from the academic year 2012-2013)

Curriculum of Intermediate Vocational Course
In
COMPUTER SCIENCE & ENGINEERING

State Institute of Vocational Education
O/o the Commissioner of Intermediate Education,
Andhra Pradesh, Hyderabad

&

Board of Intermediate Education,
Andhra Pradesh, Hyderabad
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1. INTRODUCTION

The objectives of Vocational Education System in the context of fulfillment of national goal are to train the students for employment in the growing sectors of economy both organized and unorganized, to provide an alternative channel for higher education and to prepare students for self-reliance and gainful employment. There has been a great improvement in the demand for computer professionals during the past few years. To cater to certain computer oriented requirements of the business sector the Computer science course syllabus has been drafted.

2. OBJECTIVES OF COURSE

• To develop professional competence in the use of computers and related hardware, programming skills and techniques.
• To train the students to acquire skills and mastery in the use and development of different software.
• To prepare for self and wage employment.

3. SKILLS TO BE PROVIDED

• Skills to operate different computer hardware devices.
• Skills in maintenance procedures.
• Skills in configuring the system software and installation procedures.
• Skills in using specific packages and Languages.
• Skills in programming techniques and data processing.
• Skills in computer and data security.
4. JOB OPPORTUNITIES

(a) WAGE EMPLOYMENT:
- Junior Programmer
- Computer operator
- Computer Instructor
- Software marketing personal
- Computerized Accounts Assistant
- Networking technicians with service providers
- Drafting assistants

(b) SELF EMPLOYMENT:
- DTP operator.
- Internet and E-mail center maintenance
- Maintaining and establishment of small networks
- Image and Video editing
- Basic hardware & Trouble shooting technician.
- Web Designer
## Annual Scheme of Instruction and Examination for Computer Science & Engg Course

### Part-A Theory

<table>
<thead>
<tr>
<th>Course</th>
<th>Periods</th>
<th>Marks</th>
<th>Practical</th>
<th>Periods</th>
<th>Marks</th>
<th>Total</th>
<th>Periods</th>
<th>Marks</th>
</tr>
</thead>
<tbody>
<tr>
<td>English</td>
<td>150</td>
<td>50</td>
<td>-</td>
<td>150</td>
<td>50</td>
<td>1475</td>
<td>500</td>
<td></td>
</tr>
<tr>
<td>General Foundation course</td>
<td>150</td>
<td>50</td>
<td>-</td>
<td>150</td>
<td>50</td>
<td>1475</td>
<td>500</td>
<td></td>
</tr>
</tbody>
</table>

### Part-B

3. **Paper-I** Computer Fundamentals & MS-Office
   - Periods: 135
   - Marks: 50
   - Practical: 135
   - Marks: 50
   - Total: 270

4. **Paper-II** Programming in C
   - Periods: 135
   - Marks: 50
   - Practical: 135
   - Marks: 50
   - Total: 270

5. **Paper-III** Accountancy and Tally
   - Periods: 135
   - Marks: 50
   - Practical: 135
   - Marks: 50
   - Total: 270

6. **OJT**
   - Periods: 365
   - Marks: 100
   - Total: 365

7. **Total**
   - Periods: 705
   - Marks: 250
   - Total: 770

---

### On the Job Training November and December

#### Electrical Technician II year

### Part-A Theory

<table>
<thead>
<tr>
<th>Course</th>
<th>Periods</th>
<th>Marks</th>
<th>Practical</th>
<th>Periods</th>
<th>Marks</th>
<th>Total</th>
<th>Periods</th>
<th>Marks</th>
</tr>
</thead>
<tbody>
<tr>
<td>English</td>
<td>150</td>
<td>50</td>
<td>-</td>
<td>150</td>
<td>50</td>
<td>1475</td>
<td>500</td>
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</tr>
<tr>
<td>General Foundation course</td>
<td>150</td>
<td>50</td>
<td>-</td>
<td>150</td>
<td>50</td>
<td>1475</td>
<td>500</td>
<td></td>
</tr>
</tbody>
</table>

### Part-B

3. **Paper-I** OOPS & JAVA
   - Periods: 110
   - Marks: 50
   - Practical: 115
   - Marks: 50
   - Total: 225

4. **Paper-II** Relational Data Base Management System
   - Periods: 110
   - Marks: 50
   - Practical: 115
   - Marks: 50
   - Total: 225

5. **Paper-III** Data Communications & Computer Networks.
   - Periods: 110
   - Marks: 50
   - Practical: 115
   - Marks: 50
   - Total: 225

6. **OJT**
   - Periods: 450
   - Marks: 100
   - Total: 450

7. **Total**
   - Periods: 630
   - Marks: 250
   - Total: 795

---

**1000**
On the Job Training: August, September & October

EVALUATION OF ON THE JOB TRAINING:

The “On the Job Training” shall carry 100 marks for each year and pass marks is 50. During on the job training the candidate shall put in a minimum of 90% of attendance.

The evaluation shall be done in the last week of January.

Marks allotted for evaluation:

<table>
<thead>
<tr>
<th>S.No</th>
<th>Name of the activity</th>
<th>Max. Marks allotted for each activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Attendance and punctuality</td>
<td>30</td>
</tr>
<tr>
<td>2</td>
<td>Familiarity with technical terms</td>
<td>05</td>
</tr>
<tr>
<td>3</td>
<td>Familiarity with tools and material</td>
<td>05</td>
</tr>
<tr>
<td>4</td>
<td>Manual skills</td>
<td>05</td>
</tr>
<tr>
<td>5</td>
<td>Application of knowledge</td>
<td>10</td>
</tr>
<tr>
<td>6</td>
<td>Problem solving skills</td>
<td>10</td>
</tr>
<tr>
<td>7</td>
<td>Comprehension and observation</td>
<td>10</td>
</tr>
<tr>
<td>8</td>
<td>Human relations</td>
<td>05</td>
</tr>
<tr>
<td>9</td>
<td>Ability to communicate</td>
<td>10</td>
</tr>
<tr>
<td>10</td>
<td>Maintenance of dairy</td>
<td>10</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>100</td>
</tr>
</tbody>
</table>

NOTE: The On the Job Training mentioned is tentative. The spirit of On the Job training is to be maintained. The colleges are at liberty to conduct on the job training according to their local feasibility of institutions & industries. They may conduct the entire on the job training periods of (363) I year and (450) II year either by conducting classes in morning session and send the students for OJT in afternoon session or two days in week or weekly or monthly or by any mode which is feasible for both the college and the institution. However, the total assigned periods for on the job training should be completed. The institutions are at liberty to conduct On the Job training during summer also, however there will not be any financial commitment to the department.
### Scheme of Instructions Per Week

**Computer Science Engineering Course**

<table>
<thead>
<tr>
<th>Part-A</th>
<th>Theory</th>
<th>Practicals</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. English</td>
<td>4</td>
<td>--</td>
<td>4</td>
</tr>
<tr>
<td>2. G.F.C.</td>
<td>4</td>
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<td>4</td>
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</table>

<table>
<thead>
<tr>
<th>Part-B Vocational Subjects</th>
</tr>
</thead>
<tbody>
<tr>
<td>Paper-I</td>
</tr>
<tr>
<td>Paper-II</td>
</tr>
<tr>
<td>Paper-III</td>
</tr>
</tbody>
</table>

| Total                      | 20 | 12 | 32 |
## 5 C. LISTS OF SUBJECTS IN COMPUTER SCIENCE & ENGINEERING

### FIRST YEAR

<table>
<thead>
<tr>
<th>THEORY</th>
<th>PRACTICAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. COMPUTER FUNDAMENTALS &amp; MS OFFICE</td>
<td>1. WINDOWS &amp; MS OFFICE</td>
</tr>
<tr>
<td>2. PROGRAMMING in C</td>
<td>2. C –PROGRAMMING</td>
</tr>
<tr>
<td>3. ACCOUNTANCY and TALLY</td>
<td>3. ENGINEERING DRAWING</td>
</tr>
</tbody>
</table>

### SECOND YEAR

<table>
<thead>
<tr>
<th>THEORY</th>
<th>PRACTICAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. OOPS AND JAVA</td>
<td>1. OOPS &amp; JAVA</td>
</tr>
<tr>
<td>2. RELATIONAL DATABASE MANAGEMENT SYSTEM</td>
<td>2. SQL, PHOTOSHOP &amp; PAGEMAKER</td>
</tr>
<tr>
<td>3. DATA COMMUNICATIONS &amp; COMPUTER NETWORKS</td>
<td>3. INTERNET TECHNOLOGIES</td>
</tr>
</tbody>
</table>
06. SYLLABUS
COMPUTER SCIENCE & ENGINEERING
I YEAR

PART-B - VOCATIONAL SUBJECTS

PAPER-I COMPUTER FUNDAMENTAL & MS-OFFICE [THEORY]

PERIODS PER WEEK : 4 PERIODS PER YEAR : 135

<table>
<thead>
<tr>
<th>S.NO.</th>
<th>UNITS</th>
<th>NO.OF PERIODS</th>
<th>WEIGHTAGE OF MARKS</th>
<th>NO. OF SHORT QUESTIONS</th>
<th>NO.OF ESSAY QUESTIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>Introduction to Computer systems and Hardware</td>
<td>10</td>
<td>8</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>II</td>
<td>Overview of Operating Systems:-</td>
<td>10</td>
<td>8</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>III</td>
<td>MS Word</td>
<td>30</td>
<td>18</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>IV</td>
<td>MS Excel</td>
<td>30</td>
<td>16</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>V</td>
<td>MS Power Point</td>
<td>20</td>
<td>8</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>VI</td>
<td>Ms Access</td>
<td>35</td>
<td>10</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>135</td>
<td>68</td>
<td>10</td>
<td>8</td>
</tr>
</tbody>
</table>

Note: After completion of every unit one assignment will be given to the students

Note:- The question paper contains TWO Sections.

SECTION – A contains 10 short questions carries 2marks each,

SECTION – B contains 8 Long questions carries 6marks each.

The student has to answer ALL questions in SECTION – A and B any FIVE Questions in SECTION-B.

Additions/ Deletions/changes

1. Computer Fundamentals and MS Office has been changed from Paper 2 to Paper1.
2. The unit “Introduction to Computer systems and Hardware” has been added as the first unit in this subject Computer Fundamentals and MS Office. It has been deleted from the previous syllabus paper 1 ie. Computer fundamentals and programming in C.
COMPUTER SCIENCE & ENGINEERING
I Year (THEORY SYLLABUS)

PAPER 1 : COMPUTER FUNDAMENTALS & MS OFFICE.

1. Introduction to Computer systems and Hardware
   • Introduction to Computers, generations of computer
   • Classification of Computers based on Purpose, Operation & Size
   • Anatomy of Computers
   • Number Systems
   • Basic I/O Devices
   • Block Diagram of CPU
   • Memory units- Primary and Auxiliary memory
   • Programming Languages, general software features trends and utilities.

2. Overview of Operating Systems
   • Introduction to Operating system, function and its types
   • Features of DOS
   • Working with DOS Commands
   • Features of Windows
   • Meaning of Multitasking, File system, desktop components, control panel, Windows Explorer, Device manager, File Manager and Program Manager, Display properties, taskbar properties etc.

3. MS-Word
   • Introduction to Word Processing
   • Editing a Document
   • Move and Copy Text and Help System
   • Formatting Text and Paragraph
   • Finding and Replacing Text and Spell Checking
   • Using Tabs
   • Enhancing Document
   • Columns, Tables and Other Features
   • Using Graphics, Templates and Wizards
   • Using Mail Merge
   • Miscellaneous features of Word
4. MS-Excel
- Introduction to Spreadsheet
- Creating Worksheets & feeding data
- Using functions
- Editing Cells and Using commands and functions
- Moving and Copying, Inserting and Deleting Rows and Columns
- Formatting a Worksheet
- Opening, Saving and Printing a Worksheet
- Working with Charts
- Working with Macros
- Pivot tables

5. MS-PowerPoint
- Creating Presentations using AutoContent Wizard, Template & Blank Presentation
- Working with Master’s Slide, Title handout and Notes
- Viewing a Presentation
- Drawing Objects & Inserting OLE
- Drawing freeform shapes
- Rotating Objects
- Animation in slides/objects

6. MS-Access
- Concept of data and information.
- Introduction to Database management systems.
- Creating a database.
- Concepts of related tables and integrity constraints.
- Designing tables.
- Use of queries, types of queries and creating queries.
- Creating Forms and Reports

Reference Books:
1. PC Software for Windows made simple by R K Taxali — Tata McGraw Hill
2. Fundamentals of MS-Office — BPB Publication
### COMPUTER SCIENCE & ENGINEERING

I YEAR

PAPER-I: WINDOWS & MS-OFFICE [PRACTICAL]

<table>
<thead>
<tr>
<th>S.NO.</th>
<th>UNITS</th>
<th>NO.OF PERIODS</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Working With Windows</td>
<td>30</td>
</tr>
<tr>
<td>2</td>
<td>MS Word</td>
<td>30</td>
</tr>
<tr>
<td>3</td>
<td>MS Excel</td>
<td>45</td>
</tr>
<tr>
<td>4</td>
<td>MS Power Point</td>
<td>10</td>
</tr>
<tr>
<td>5</td>
<td>MS Access</td>
<td>20</td>
</tr>
<tr>
<td></td>
<td><strong>Total</strong></td>
<td><strong>135</strong></td>
</tr>
</tbody>
</table>
UNIT – I: FAMILIARIZATION WITH WINDOWS - Working with the following:

- Features of windows
- Graphical user interface (GUI)
- File System
- Multitasking
- Plug and Play Support
- Multimedia Support
- Comparison with CUI (Dos or Unix)

1. WORKING WITH WINDOWS - Working with the following:
   - Elements of Windows Interface
   - My Computer
   - My Documents
   - Internet Explorer
   - Network Neighborhood
   - Recycle Bin
   - Taskbar
   - My Briefcase
   - Shortcut Menus
   - Property window
   - Mouse Operations
   - Shortcuts

2. STARTING A PROGRAM (APPLICATION) - Working with the following:
   - Start Menu
   - Programs Menu
   - Documents Menu
   - Settings Menu
   - Find and Help Menu
   - Run Menu
   - Customizing Windows- resizing, moving and closing.
5. **SHUTTING DOWN THE PC** – Different options like standby, restart etc.

**UNIT - II: MANAGING FILES AND FOLDERS WORKING IN WINDOWS** - Working with the following:

- Folders
- Desktop
- My Computer Folder
- My Document Folder
- Notepad
- Creating Text Files
- Editing Text Files
- All the Menu Features of Notepad
- Renaming the Folders
- Selecting the Objects in Folders
- Selecting One Folder
- Boundary Box Method to Select Multiple Files
- Selecting Single Group of Consecutive Folders
- Selecting Non-Consecutive Folders
- Selecting Group Of Consecutive Folders
- Deleting Files and Folders
- Using Recycle – Bin
- Restoring Deleted File or Folder
- Emptying the Recycle Bin

1. **OPENING MULTIPLE OBJECTS:**

- Open Multiple Objects
- Open Multiple Applications Using the Mouse
- Creating our Own Folder
- Copying Objects
- Drag and Drop Feature
- Using Keyboard
- Using Standard Toolbar
- Right Dragging Method
- Moving Objects
- Drag and Drop Feature
• Using Keyboard
• Using Standard Toolbar
• Right Dragging Method

2. **CONFIGURING WINDOWS FOR UNIQUE USER AND DESKTOP:**
• Managing Passwords
• Setting Programs
• Starting Programs on Start-Up Menu
• Changing the Icon for a File Tag or Other Object
• Control Panel
• Setting Mouse Properties
• Setting Display Properties
• Setting Printer Properties
• Setting Date and Time Options
• Controlling the Folders Appearance
• Setting the Font Appearance
• Using the Task Bar
• Features of Taskbar
• Setting the Properties of Taskbar
• Desk Top
• Features Of Desk Top
• Customizing the Desktop
• Windows Explorer
• Viewing Files and Folders
• Creating Files and Folders
• Dragging and Dropping Files
• Cut – Copy – Paste
• Searching Files
• Deleting Files and Folders
• Previewing a Document with Quick View.

**UNIT –III: USING ACCESSORIES, DISK TOOLS AND PRINTERS ACCESSORIES AVAILABLE IN WINDOWS:**
• Using Standard Calculator
• Using Scientific Calculator
• Statistics Box
• Word Pad
  o Starting Word-Pad
  o Creating New WordPad Document
  o Opening WordPad Document
  o Saving a Document
  o Selecting Text
  o Moving and Copying Text

• WINDOWS PAINT
  o Starting Windows Paint
  o Drawing Pictures with Paint
  o Drawing with Pencil Tool
  o Drawing the Picture with Tools
  o Embedding a Paint Object
  o Previewing Painting

LOCATING YOUR FILES AND ORGANISING DISK.
• Finding Files using File Tool
• Using Wild–Cards
• Finding a Program–File
• Searching by Modification Date
• Making a Search Case – Sensitive
• Formatting and Labeling Disks
• Back-Up Files
  o Creating Back-Up File
  o Saving File Set
  o Opening File-Set for using in Back-Up
  o Restoring Files
  o Verifying Back-Up Files

USING PRINTERS
• Windows -Printing Features
• The Print window – various options.

MS -OFFICE

MS-WORD:
Familiarization with MS Word
1. Features of Word Processor
2. Opening MS Word
3. Contents of MS Word Window
4. Saving with password.
5. Opening an existing Document

Text Formatting
1. Selecting Continuous and Discontinuous text
2. Using Cut, Copy and Paste
3. Using Paste Special
4. Changing the Font type, style, size and color.
5. Changing the text case
6. Highlighting the text
7. Using superscripted and subscripted text
8. Clearing the formatting

Paragraph Formatting
1. Text alignment
2. Line spacing adjustment
3. Indenting the text
4. Bullets and Numbering
5. Inserting and changing tabs
6. Applying Borders and shading

Searching for text
1. Finding and Replacing Text
2. Jumping to the required section using “Go To”

Inserting Objects
1. Inserting and formatting pictures.
2. Inserting Symbols and equations.
3. Inserting and editing shapes and charts
4. Inserting page and section breaks
5. Inserting Text Box
6. Inserting Word Art
7. Inserting Auto text
8. Working with Headers and Footers
9. Inserting and formatting Page Numbers
10. Inserting comments, footnotes and endnotes
11. Inserting Hyperlinks

Working with tables
1. Using different techniques to insert tables.
2. Inserting and deleting cells, columns and rows.
3. Merging and splitting cells
4. Aligning text in tables
5. Changing text direction in tables
6. Working with borders and shading
7. Wrapping text around a table
8. Inserting and modifying formulae in tables
9. Repeating header rows in different pages

Working with Page Layout
1. Setting the page size and margins
2. Setting the page orientation
3. Changing page colour and borders
4. Inserting watermarks
5. Insert line numbers

Additional Tools
1. Using the spell and grammar check tool
2. Using Thesaurus
3. Counting words in documents
4. Using Autocorrect options
5. Showing/hiding the formatting marks
6. Creating and using Macros
7. Arranging and Viewing multiple windows

Mail Merge
1. Creating and storing data for mail merge.
2. Creating the mail merge documents.
3. Merging the documents, editing mail merged documents.

Printing the Documents
1. Previewing the documents to be printed
2. Setting the Printer
3. Setting the print range and number of copies
4. Setting the print properties

Emphasis to be laid on using Shortcut Keys for each task.

MS-EXCEL

- Features of MS-Excel
- Contents of the MS-Excel Window
  - Title Bar
  - Menu Bar
  - Toolbars
  - Row and Column Headings
  - Cell
  - Formula Bar
  - Reference Area
  - Status Bar
  - Scroll Bar
  - Worksheet Tabs
  - Office Assistant

Managing Worksheets
- Selecting Worksheets
- Renaming Worksheet
- Inserting and Deleting Worksheets
- Changing the order of Worksheets
- Copying Worksheets
- Selecting cells, columns, rows and sheets
- Inserting Rows and Columns
- Hiding rows and Columns
- Freezing rows and Columns
- Merging Cells
- Formatting Cells
- Cell Referencing
• Saving a Workbook
• Protecting Worksheets, locking and hiding cells.

**Working with Data**

• Entering Data
• The Data Types
• Formatting Data
• Entering Series
• Copying Data
• Using Paste and Paste Special
• Relative and Absolute Referencing
• Assigning Range Names

**Performing Calculations in Excel**

• Entering simple formulae for addition subtraction etc.
• Familiarization with the categories of functions
• Working with the functions in Math and statistical category like sum, product, sqrt average, max, min, round etc.
• Working with the functions in Logical category
• Working with the functions in Date and Time category
• Working with the functions in Text category
• Applying functions to create students marks sheets and reports, Employee pay details and Income Tax computations etc.
• Linking Sheets and Pasting functions

**Charts in Excel**

• Familiarization with the types of charts
• Creating and formatting charts

**Working with Data**

• Applying Conditional Formatting to cells
• Sorting and Filtering Data
• Creating Subtotals
• Applying Validation
• Creating and using Lists
• Creating Data Forms

**Additional Tools in Excel**
• Formula Auditing
   • Using Goal seek and creating scenarios.
   • Creating one and two variable data tables
   • Creating and modifying a pivot table

**Printing Excel Sheets**

• Setting the Page Size, orientation and margins.
• Previewing Excel sheets
• Inserting header and footer
• Repeating rows / columns to repeat in all pages.

**MS – POWER POINT**

**Starting power point - Power Point Window Description**

• Title Bar
• Menu Bar
• Toolbars
• Ruler bar
• Slide
• Scroll Bar
• Movement Buttons
• View Buttons
• Status Bar

**The MS-PowerPoint Views**

• Slide Sorter View
• Outline View
• Notes Pages View
• Slide Show View

**Creating a new presentation**

• Using templates
• Using Slide Layouts
• Inserting, deleting and rearranging slides
• Creating Speaker’s notes

**Working with Slides**

• Inserting and formatting text.
• Inserting and formatting shapes and pictures
• Inserting tables and charts
• Inserting and editing organization charts
• Inserting hyperlinks
• Inserting music and video
• Inserting various animation effects to the inserted objects

Running the Slide Show
• Modifying the slide transition
• Setting and Controlling the slide show - timer or mouse controlled

MS-ACCESS
• Familiarization with the access window and objects.
• Table design Using design wizard
• Assigning primary key, adding validations, changing the data format in table design
• Creating fields with lookup data.
• Creating relationships between tables
• Creating simple select queries in design mode.
• Modifying the queries to add criteria, filtering etc.
• Creating calculated queries
• Creating Forms and modifying Form Design
• Creating Reports and modifying Report Design

*******
# COMPUTER SCIENCE & ENGINEERING SYLLABUS

## I YEAR

### PAPER-II: PROGRAMMING ‘C’ (THEORY)

**PERIODS PER WEEK : 4**

**PERIODS PER YEAR : 135**

<table>
<thead>
<tr>
<th>S.NO.</th>
<th>UNITS</th>
<th>NO. OF PERIODS</th>
<th>WEIGHTAGE OF MARKS</th>
<th>NO. OF SHORT QUESTIONS</th>
<th>NO. OF ESSAY QUESTIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>Introduction to Problem Solving Techniques</td>
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<td>10</td>
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<tr>
<td>II</td>
<td>Features of ‘C’</td>
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<td>24</td>
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<tr>
<td>III</td>
<td>Functions</td>
<td>50</td>
<td>16</td>
<td>2</td>
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<td>IV</td>
<td>Arrays in ‘C’</td>
<td>20</td>
<td>10</td>
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<tr>
<td>V</td>
<td>Structures in C</td>
<td>10</td>
<td>8</td>
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<tr>
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<td><strong>Total</strong></td>
<td><strong>135</strong></td>
<td><strong>68</strong></td>
<td><strong>10</strong></td>
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</tbody>
</table>

Note: After completion of every unit one/two assignments will be given to the students

**Additions / Deletions/ Changes:**

1. Previously this paper was “Computer Fundamentals and Programming in C”.
2. The unit “Introduction to Computer systems and hardware” has been deleted from this subject and added to new paper 1 ie. “Computer Fundamentals and MS office”
1. Introduction to Problem Solving Techniques
   - Procedure and Algorithms
   - Flowcharts
   - Pseudo code

2. Features of ‘C’
   - Introduction to ‘C’
   - Structure of a ‘C’ Program
   - Data types in ‘C’ – Constants & Variables- operators and Expressions
   - Statements – data definition- assignment-
   - I/O control structure (if, if-else, for, while, do-while)
   - Structure for looping and nested looping
   - Branching (switch, break, continue)
   - Unconditional branching (go to statement) simple programs covering above units

3. Functions
   - What is a function?
   - Difference between a function and a procedure
   - Advantages of functions
   - User defined and library functions, main function
   - Return types.
   - Concepts associated with functions – Recursion, scope of a function, extent of a variable.
   - Use of various categories of built in functions like math( ), string( ) etc processing.

4. Arrays in ‘C’
   - Array as Data structure- defining single and multidimensional arrays, simple operations on arrays, simple programs on arrays.
   - File operations like fopen( ), fclose( ), fprintf( ), fscanf( ) etc.

5. Structures in C
   - Structures:- definition - declaration – operation on structures, array of structures, array with structures, structure as data types, operations on structures
   - Unions – definition – difference between union and structure. Creating and using a structure

Reference Books:
1. Let us C by Yashwant Kanetkar
2. Computers and Common sense by Roger Hunt & P.B. Shelley
3. Introduction to Computers by Rajaraman

**COMPUTER SCIENCE & ENGINEERING**

**I YEAR**

**PRACTICAL-II: ‘C’ - PROGRAMMING (PRACTICAL)**

**PERIODS PER WEEK : 4**

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<tbody>
<tr>
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<tr>
<td>II</td>
<td>Programs involving control structures</td>
<td>30</td>
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<tr>
<td>III</td>
<td>Programs to create and use Functions</td>
<td>30</td>
</tr>
<tr>
<td>IV</td>
<td>Programs involving Arrays</td>
<td>15</td>
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<tr>
<td>V</td>
<td>Structures in C</td>
<td>20</td>
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<tr>
<td>VI</td>
<td>File operations</td>
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</table>

Note: After completion of every unit one/two assignments will be given to the students
COMPUTER SCIENCE & ENGINEERING
I YEAR
PRACTICAL II – 2: C - PROGRAMMING (SYLLABUS)

The List of sample Programs are given below :{ Practice some more related programs on each unit}

1. Performing Addition, Subtraction, Multiplication, Division and Modulus operation on two integers.
2. Reading integers, characters and strings from the keyboard and displaying them.
3. Reading the ASCII code of a character and vice versa.
4. Finding the Area and Circumference of a Circle.
5. Calculating simple and compound interest.
6. Converting temperature in Celsius to Fahrenheit, Miles to Kms and Kgs to Pounds.
7. Finding the Average of the marks of a student.
8. Finding if a number is even or odd.
9. Finding if a student’s result is “pass” or “fail” based on marks.
10. Finding the weekly wages of a worker taking overtime work into consideration.
11. Finding the grade obtained by a student based on the total marks obtained.
12. Printing numbers from 1 to n, where n is read from the keyboard.
13. Generating multiplication Table of given number n.
14. Perform Lowercase to Uppercase Character Conversion and vice versa.
15. Calculation of Factorial to given number
16. Largest of three given numbers
17. Creating a single dimensional array of numbers and displaying the contents.
18. Picking the largest number from a single dimensional array of numbers.
19. Arranging a single dimensional array of numbers into ascending / descending order.
20. Finding the length of a given character array.
22. Adding two single dimensional arrays.
23. Adding 2 two dimensional matrices.
24. Checking whether a given number is a palindrome or not.
25. Using string functions like stringcat(), strlen(), strcpy() etc.
26. Writing and calling a function to print 25 ‘*’ in a line.
27. Write and call a function to print n number of ‘*’ in a line, where n is the parameter passed to the function.

28. Writing and calling functions to add, subtract and multiply two numbers.

29. Use trigonometric functions to display Sin and Cos value of degrees from 0 to 180 degrees in steps of 30 degrees.

30. Use the sqrt() function to find the real roots of a quadratic equation.

   Create book1 and book2 as copies of this structure and display the values for two books. Display the total cost of the books.

32. Create a structure by name “employee” with necessary data members and create an array of 5 employees and display the values.

33. Use file operation functions to read write append data to and from files.

34. Writing a program to create a simple text file and write and read data from it using file operation functions like fopen() etc.

35. Writing a program to write integers to a file, read them and print them into two file depending on whether they are even or odd.
## COMPUTER SCIENCE & ENGINEERING

### I YEAR

**PAPER-III: ACCOUNTANCY AND TALLY (THEORY)**

**PERIODS PER WEEK : 4**  
**PERIODS PER YEAR : 135**

<table>
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<tr>
<th>S.NO.</th>
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<th>NO. OF PERIODS</th>
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<td>I</td>
<td>Introduction to Accountancy</td>
<td>5</td>
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<td>Double Entry System:-</td>
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<td>8</td>
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<td>III</td>
<td>Journal</td>
<td>10</td>
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<td>IV</td>
<td>Ledger</td>
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<tr>
<td>V</td>
<td>Subsidiary Books</td>
<td>15</td>
<td>8</td>
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<td>VI</td>
<td>Cash Book</td>
<td>15</td>
<td>8</td>
<td>1</td>
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<tr>
<td>VII</td>
<td>Journal Proper</td>
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<td>VIII</td>
<td>Trail Balance and rectification</td>
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<td>IX</td>
<td>Final Accounts</td>
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<td>8</td>
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<td><strong>68</strong></td>
<td><strong>10</strong></td>
<td><strong>8</strong></td>
</tr>
</tbody>
</table>

Note: After completion of every unit one/two assignments will be given to the students

**Addition:**

1. Tally Package has been added as a unit keeping in view the necessity of accounting students to be aware of computerized accounting packages.
COMPUTER SCIENCE & ENGINEERING
I YEAR
PAPER 3 : ACCOUNTANCY AND TALLY (THEORY SYLLABUS)

Unit I: Introduction: Book keeping Vs Accountancy- uses of Accountancy- Accounting concepts- Accounting Conventions- Accounting terminology.

Unit II: Double Entry System: Meaning theory of double entry system- Classification of Accounts- Advantages of double entry system

Unit III: Journal: Introduction- generalizing of different transactions- Advantages of journal

Unit IV: Ledger: Meaning- Ledger posting- system of balancing accounts advantages of ledger


Unit VII: Journal Proper: Meaning and significance- pass book- need for reconciliation cause of difference – errors and disclosed and not disclosed by trial balance rectification of errors Suspense account.

Unit VIII: Trial Balance and Rectification: Meaning and significance- features and Objectives- preparation of trial balance- errors disclosed by trial balance rectification of suspense account.

Unit IX: Final Accounts:
(a) Trading Account: Meaning and significance: performance of trading account- adjustments
(b) Profit and Loss account: Meaning and significance – steps in preparation of profit and loss accounts- performance of profit and loss account- adjustments
(c) Balance Sheet: Meaning and significance- objectives – preparation of balance sheet- arrange of assets and liabilities – adjustments.

Unit X: Tally : - Introduction to Tally package
a) Introduction to Accounting packages – Features, accounting, data migration capability, duties and taxes, advantages and disadvantages.
b) Financial functions of Tally – Inventory and application – Creation of company, alteration of company, master configuration, creation of groups, grouping of ledger accounts, voucher configuration, recording transactions of sample data.
c) Display and reports – Accounting reports, Balance sheet, profit and loss account, printing reports.
d) Ratio Analysis – Classification- Financial ratios, Profitability ratio, Activity ratio analysis.
COMPUTER SCIENCE & ENGINEERING

I YEAR

PAPER-III: ENGINEERING DRAWING (PRACTICAL)

PERIODS PER WEEK : 4          PERIODS PER YEAR : 135

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<tbody>
<tr>
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<td>Introduction</td>
<td>6</td>
</tr>
<tr>
<td>2</td>
<td>Lettering and Dimensioning</td>
<td>20</td>
</tr>
<tr>
<td>3</td>
<td>Geometrical Construction</td>
<td>24</td>
</tr>
<tr>
<td>4</td>
<td>Orthographic Projection.</td>
<td>35</td>
</tr>
<tr>
<td>5</td>
<td>Isometric Projection</td>
<td>25</td>
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<tr>
<td>6</td>
<td>Using AUTOCAD</td>
<td>25</td>
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<tr>
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<td><strong>Total</strong></td>
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</table>

Note: After completion of every unit one/two assignments will be given to the students

Addition /Deletion:

1. This subject which was previously paper 1 has been now changed to Paper 3 practical.
2. The units “Sections of solids” and “development of surfaces” have been replaced by Introduction to AutoCAD software. This has been done keeping the current trend in view about the necessity of the computer students to be well aware of drafting tools using computers. This will also increase the benefits to the student in view of vertical mobility, ie. For admission to second year polytechnic.
1.0. Introduction
- Scope and objective of the subject
- Importance of engineering drawing as a communication medium
- Drawing instruments and their uses
- Scales: Recommended scales, reduced & enlarged
- Sheet sizes: A0, A1, A2, A3, A4, A5. Layout of drawing sheet sizes of title block and its contents
- Simple exercises on the use of drawing instruments.

2.0. Lettering and Dimensioning
- Types of Lettering
- Guide Lines for lettering
- Recommended sizes of letters and numbers
- Single stroke letters.
- Dimensioning - rules and systems of dimensioning – dimensioning a given drawing

3.0 Geometric Construction
- Bisecting a line - perpendiculars - parallel lines - division of a line
- Angles - bisection, trisection
- Tangent lines touching circles internally and externally
- Polygons - Regular polygons - circumscribed and inscribed in circles.
- Conic sections - Definitions of focus, directrix, eccentricity
  - Construction of Ellipse by Concentric circles method.
  - Construction of parabola by rectangular method.
  - Construction of Hyperbola when given the position of point from X-axis and Y-axis.

4.0 Orthographic Projection
- Definition - Planes of Projection - Four quadrants – Reference line.
- First angle projection - Third angle projection
- Projections of points
- Projections of straight lines
- Projections of planes
- Projections of solids
- Conversion of pictorial views into orthographic views

5.0. Isometric Projection
- Definition - Isometric axes, lines and planes
- Isometric Scale - Isometric view
- Drawing of isometric views of plane figures
- Drawing of isometric views of prisms and pyramids
- Drawing of isometric view of cylinders and cones

6.0. Using AutoCAD
- Introduction to AutoCAD: the Interface
- The Basics of Using AutoCAD Drawing Tools
- Using AutoCAD Navigation Tools
- Using AutoCAD Drafting Tools
- Modifying AutoCAD Drawing Objects using Copy / Move, Scale, Rotate etc.
- Working with text in AutoCAD
COMPUTER SCIENCE & ENGINEERING SYLLABUS

II YEAR
PAPER-I: OOPS and JAVA (THEORY)

PERIODS PER WEEK : 4
PERIODS PER YEAR : 110.

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<tr>
<td>II</td>
<td>The Java programming language</td>
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<td>9</td>
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<tr>
<td>III</td>
<td>Control Statements and Arrays</td>
<td>10</td>
<td>8</td>
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<td>IV</td>
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<td>20</td>
<td>10</td>
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<tr>
<td>V</td>
<td>Packages and Interfaces</td>
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<td>110</td>
<td>68</td>
<td>10</td>
<td>8</td>
</tr>
</tbody>
</table>

Note: After completion of every unit one/two assignments will be given to the students

Additions / Deletion / Changes

1. This subject has replaced the earlier paper1, ie. “Data Structures using C”. It has been viewed that “Data structures using C” is an application cum extension of C language which has already been covered in the first year. Also there is a need to introduce the student to the currently prevalent OOPS technology. Hence this new subject “OOPS through Java” has been introduced. This will also help the user in writing scripting languages and in DHTML which is covered in paper 3 practical’s in the second year.
COMPUTER SCIENCE & ENGINEERING

II YEAR

PAPER-I: OOPS and JAVA (THEORY SYLLABUS)

1. Object-Oriented Programming and Java
   Introduction to bytecode, JVM, JRE and JIT compiler. Java and the Internet, Platform independence of JAVA. Introduction to Applets. Main features of Java.

2. The Java programming language
   Data types in Java types. Identifiers, Literals and Keywords in Java. Operators in Java. Writing simple methods and calling them. Types of methods based on return type and arguments. Type conversion and casting. Using the keyword static. Concept of constructors and destructor.

3. Control Statements and Arrays
   The If, Nested If, If – Else, if- else-if ladder and the switch statement. Java Iteration statements – while, do- while and for statements. Break and Continue statements.
   One and two dimensional arrays, reading and writing to arrays, mathematical operations on array data.

4. Implementing OOPS in Java
   Creating and using various types of Methods to accept / return basic data types and objects. Implementing the concept of Polymorphism, Inheritance and Operator Overloading.

5. Packages and Interfaces

6. Exception Handling
   Exception Handling fundamentals. Exception types, the try, catch, throw, throws and finally keywords. Java’s built in exceptions. Writing simple programs for exception handling.

7. Threads
   Concepts of Threads, Multithreading and Multitasking. The Thread class and its methods. Writing simple programs involving threads.

8. The Java Applet
   Introduction to Java Applets. Basic methods of the Applet class, Applet initialization and Termination, the HTML applet tag and writing code to create simple applets.

9. The Java Abstract Windowing Toolkit
   The Java AWT concepts, its purpose, commonly used AWT classes, creating and managing forms with simple controls to implement common arithmetic operations like adding two numbers etc.

10. Event Handling
    Concepts of event, event sources and listeners. Common event classes and methods. Creating Forms and writing code to manage simple Events on buttons and mouse.(click, double click, mouse move over)
## COMPUTER SCIENCE & ENGINEERING
### II YEAR
#### PAPER-I: OOPS & JAVA (PRACTICAL)

**PERIODS PER WEEK : 4**  
**PERIODS PER YEAR : 115**

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<tbody>
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<td>1</td>
<td>Programs using basic data types and operators</td>
<td>15</td>
</tr>
<tr>
<td>2</td>
<td>Programming with Control Statements</td>
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</tr>
<tr>
<td>3</td>
<td>Programming with Arrays</td>
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<tr>
<td>4</td>
<td>Creating and using Classes and Objects.</td>
<td>25</td>
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<tr>
<td>5</td>
<td>Implementing polymorphism and operator overloading</td>
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<tr>
<td>6</td>
<td>Programs involving Inheritance</td>
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<tr>
<td>7</td>
<td>Creating Packages and interfaces</td>
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<tr>
<td>8</td>
<td>Working with AWT, Java Applets and Event Handling</td>
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Note: After completion of every unit one/two assignments will be given to the students.
COMPUTER SCIENCE & ENGINEERING
II YEAR

PAPER – 1: OOPS & JAVA (PRACTICAL SYLLABUS)

NOTE:- The List of sample Programs are given below :{ Practice some more related programs on each unit}

1. Familiarization with the Java compiler and Interpreter
2. Writing a simple Java program to print a line of text.
3. Writing a simple Java Program to Add, Subtract, Multiply and divide two integers.
4. Write a Java program to convert the temperature from the command line in Celsius to Fahrenheit.
5. Write a simple Java program to find if a number from the command line is even or not.
6. Write a Java program to print numbers from 1 to n using the do … while structure.
7. Write a Java program to print the multiplication table of a given number n using the while structure.
8. Use break and continue statements in the above program to a) stop at n=8 b) skip n=5.
9. Write a Java program to find the division of a student based on the marks obtained using switch … case statements.
10. Find if a given number is prime or not using the ‘ for’ statement.
11. Write a program that prints the first 20 Fibonacci numbers.
12. Write a java program to take a word on the command line and print all the permutations of the letters, one per line.
13. Write a program to list all the files and directories contained in a directory given on the command line.
14. Create an array of integers and print its values, sum of values and average of the values
15. Find the maximum value from the given array of numbers.
16. Arrange the given array into ascending order.
17. Create a string array, write values into it and print its values.
18. Write a program to list all the files and directories contained in a directory given on the command line.
19. Create a class called distance with private data inches and feet. Add methods to get data from user and display the user given values for an object. Modifying access specifies to check the effect on accessing the variables from user functions.
20. Create a class called shape with private data length and breadth. Add methods to get data from user, display the area, perimeter and display the user given values for an object. Create default constructor and constructors that take one and two arguments each. Create objects to use these constructors.

21. Create a class called test with private data x and y. Write all necessary constructors and methods to accept data from user, display user data and return the sum and product of these variable to the user.

22. Create a class called “complex” in Java containing data by name” r” and “img” to represent the real and imaginary parts of a complex number. Write all necessary constructors and destructor. Write methods that “ accept” two objects of complex class and “return” the sum difference and product of these two complex objects.

23. Write a class containing 3 functions by name ”area” to calculate the areas of a square, triangle and rectangle based on whether the function by the same name “area” is called with 1, 2 or 3 parameters.

24. A class by name “box” contains only two data members- length and breadth. Extend it to contain another class containing a third variable called height, write constructors for the new class, and method to calculate the volume of the box. Implement the concept of virtual function in this program.

25. Write a program to create an interface by name” welcome” that contains an unimplemented method “greeting”. Create classes called “English” and “hindi” that implement this method to print the message “hello” and “namaste” respectively. Create necessary user functions to use these classes.

26. Write a class that keeps a running total of all characters passed to it (one at a time) and throws an exception if it is passed a non-alphabetic character.

27. Develop an applet to display a simple message “hello”.

28. Develop an applet that contains two text fields and a button. Write program so that the second text field displays the factorial of the number in the first field when the button is clicked.

29. Write a java program that changes the colors of the applet when different mouse events occur.

30. Write a java program that displays “Get” every one second, “Set” every two second and “Go” every three seconds using three threads.
COMPUTER SCIENCE & ENGINEERING
II YEAR
PAPER-II: RELATIONAL DATABASE MANAGEMENT SYSTEM (THEORY)

PERIODS PER WEEK : 4          PERIODS PER YEAR : 110

<table>
<thead>
<tr>
<th>S.NO</th>
<th>UNITS</th>
<th>NO. OF PERIODS</th>
<th>WEIGHTAGE OF MARKS</th>
<th>NO. OF SHORT QUESTIONS</th>
<th>NO. OF ESSAY QUESTIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>Concepts of DBMS</td>
<td>20</td>
<td>8</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>II</td>
<td>Entity and Relationship</td>
<td>15</td>
<td>8</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>III</td>
<td>Relational Model</td>
<td>15</td>
<td>16</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>IV</td>
<td>SQL</td>
<td>25</td>
<td>16</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>V</td>
<td>PL/SQL</td>
<td>20</td>
<td>8</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>VI</td>
<td>Software Development Life Cycle</td>
<td>15</td>
<td>10</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td><strong>Total</strong></td>
<td><strong>110</strong></td>
<td><strong>68</strong></td>
<td><strong>10</strong></td>
<td><strong>8</strong></td>
</tr>
</tbody>
</table>

Note: After completion of every unit one/two assignments will be given to the students

Additions / deletions/ changes:-
1. A new unit “PL / SQL “ has been introduced to help in gaining better knowledge about designing databases and their maintenance.
COMPUTER SCIENCE & ENGINEERING
II YEAR
PAPER-II: RELATIONAL DATABASE MANAGEMENT SYSTEM (THEORY SYLLABUS]


Unit III: Relational Data Model:

Unit IV: SQL: Introduction to SQL – data types – DDL,DML and DCL Commands –Set operators and joins – Sub queries and database objects. PL/SQL – Introduction – Advantages – Data types – Logical Comparisons (Numeric, character and Boolean expressions) – Control structures – concept of error handling exception. PL/SQL Tables (Declaration, Referring and inserting, deleting and fetching rows etc).

Database Triggers – syntax – parts of triggers (statement, body and restriction) -types of triggers (before and after options) Enabling and disabling triggers – Dropping triggers

Unit V: Software Development and Life cycle:
Definition of system, analysis and design - Study of software life cycle – requirement analysis, design, development, testing, implementation and maintenance.

Books:
1. Data Base Management Systems — Korth and Sudershnan
2. Data Base Management — C.J. Date
3. Software Engineering — Roger Pressman
COMPUTER SCIENCE & ENGINEERING

II YEAR

PAPER-II: SQL, PHOTOSHOP & PAGEMAKER (PRACTICAL)

PERIODS PER WEEK : 4 PERIODS PER YEAR : 115

<table>
<thead>
<tr>
<th>S.NO.</th>
<th>UNITS</th>
<th>NO.OF PERIODS</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>SQL</td>
<td>15</td>
</tr>
<tr>
<td>II</td>
<td>PL/ SQL</td>
<td>20</td>
</tr>
<tr>
<td>III</td>
<td>Image Editing with Photoshop</td>
<td>30</td>
</tr>
<tr>
<td>IV</td>
<td>DTP with PageMaker</td>
<td>50</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>115</td>
</tr>
</tbody>
</table>

Additions / Deletions /Changes:

1. A new unit “Image Editing with Photoshop” has been included. This will expose the students to various photo editing techniques thus increasing the employment opportunities in this field.
2. Corel Draw has been replaced with PageMaker which again is a DTP package from the same Adobe Suite containing Photoshop.
3. PL/ SQL have been introduced in practicals too for supporting the theory.
COMPUTER SCIENCE & ENGINEERING

II YEAR

PRACTICAL – II : SQL, PHOTOSHOP & PAGEMAKER(PRACTICAL SYLLABUS)

SQL and PL/SQL:-

Practice minimum of 40 simple Queries using SQL,PL/SQL covering all units related to DDL,DML and DCL.

PHOTOSHOP

Introduction to the Photoshop interface

Familiarization with the toolbars

Creating a new Photoshop file, adjusting colour, size and resolution settings

Importing and copying images into Photoshop

Working with layers-the layers palette, adding, deleting, adjusting the layer effects, layer features like locking, styles, opacity and blending options.

Familiarizing with the types of tools in the toolbox.

Working with the selection tools – The marquee tools, lasso tools, move tools, and the magic wand, crop and slice tools.

Working with the retouch paint tools – The healing tools, brush, clone, history, eraser, fill tools, sharpen/blur, dodge/burn and sponge tools.

Working with the drawing and type tools – The pen, freeform pen, Path selection, Line, Rectangle, Polygon, Ellipse, Custom shape, Direct selection, Anchor point and Convert Point Tools. Horizontal and Vertical Type and Type Mask tools.

Working with the annotation and measurements tools.

Working with the Image Menu - Image Size, Canvas Size, Image Adjustments, Color Modes etc.

Working with the filter menu - Blur, Sharpen, Extract, Liquify, Vanishing Point, Distort, Pixelate, Render etc.

Working with the View Menu - Zoom In, Zoom Out, Proof Colors, Screen Modes, Rulers, Guides, Snap etc.

Exercises involving image modifications using various photo editing and photo effects together.

PAGEMAKER

Intro to Adobe PageMaker

The Page Maker Window

The Toolbox and Pointer Tool
Views - Fixed Views and zooming
Moving and Resizing Objects
Adding and Deleting Pages
Using the Hand Tool
Using Guides and Rulers
Drawing Tools - Drawing Lines, Rectangles and Ovals, Polygons
Fills and Outlines - Outline and Stroke, Color Fills
Creating Frames and Blocks
Working with the Control Palette
Working with Text - Selecting Text, Managing Fonts
Working with Paragraphs - Justification, Indents, spacing and tabs
Working with Graphics – Placing, editing, linking graphics
Creating a Keyline
Manipulating with the Control Palette
    Positioning and using the Magic Scale
    Rotating, Skewing and Mirroring
    Ordering, Aligning, Distributing and Grouping objects
    Image Control and Bitmap Effects
    Non Printing Items
Working with the Story Editor
Working in Long Documents - Document Set-up, Setting Up Master Pages
Working with layers, Sorting Pages and Managing Links
Working with Tables - Creating, Formatting and Exporting Tables
Printing
Exporting to PDF
Building a Booklet
COMPUTER SCIENCE & ENGINEERING

II YEAR

PAPER-III: DATA COMMUNICATION & COMPUTER NETWORKS (THEORY)

PERIODS PER WEEK : 4
PERIODS PER YEAR : 110

<table>
<thead>
<tr>
<th>S.NO.</th>
<th>UNITS</th>
<th>NO.OF PERIODS</th>
<th>WEIGHTAGE OF MARKS</th>
<th>NO. OF SHORT QUESTIONS</th>
<th>NO.OF ESSAY QUESTIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>Data communications</td>
<td>10</td>
<td>8</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>II</td>
<td>Network Topologies</td>
<td>25</td>
<td>16</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>III</td>
<td>LAN components and Communication Hardware</td>
<td>15</td>
<td>8</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>IV</td>
<td>Internet Connectivity and Services</td>
<td>15</td>
<td>10</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>V</td>
<td>HTML &amp; Web Page Design</td>
<td>25</td>
<td>16</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>VI</td>
<td>DHTML</td>
<td>20</td>
<td>10</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td><strong>Total</strong></td>
<td><strong>110</strong></td>
<td><strong>68</strong></td>
<td><strong>10</strong></td>
<td><strong>8</strong></td>
</tr>
</tbody>
</table>

Note: After completion of every unit one/two assignments will be given to the students

Additions / Deletions / Changes:

1. Unit III and Unit IV have been clubbed. Units V and VI have been modified.
2. Unit IV now is “Internet connectivity and Services”.
3. Unit V now is “HTML and webpage design”.
4. Unit VI now is “DHTML”.
5. The new units “HTML and webpage design” and “DHTML” have been added to enable the student to gain skill in the designing of web pages which is very much needed in the present day scenario. This will enable him to become a free lance web designer or take up employment with an organization in designing maintaining websites.
6. “Introduction to Internet security” has been introduced to help the student understand the need and methods of securing the data, computers and LANs against any type of Viruses or similar attacks.
UNIT 1 :- Data communications:- Definition- Modes of data transmission (Analog and Digital)- types of Communications – Bandwidth – Communication channels (Wire cables, Microwave and Fiber optic) – methods of Data transmission (Asynchronous, Synchronous and Isochronous) – Parallel and Serial interface – Transmission Modes (Simplex, Half-duplex and Full-duplex) - multiplexing.

UNIT 2:- Network Types and Topologies :- Definition of Computer network – Advantages & disadvantages – Types of Networks (LAN, MAN, WAN, Private, public & Value added ) – Definition of Network topology - Types and structure of topologies (Bus, Ring, Star, Mesh and Hybrid) – advantages and Disadvantages of topologies.

UNIT 3:- LAN Components: -
1. Server, Clients, File server
2. Ethernet cards, HUBS, Switches, Routers, Gateways.
3. Modem and types - V-SAT, ATMS
4. Adapters- Functions and types.
5. Multiplexers Functions and Types

UNIT 4. :- Internet Connectivity and Services.
Introduction to internet – Advantages , browsers Services:- Messaging – E-mail and FTP.
Introduction to Internet security – viruses, Trojans, worms, phishing and hacking - antivirus software etc.- Current trends.

UNIT 5 :- HTML & Web page Design:-
Introduction to HTML.
HTML basic elements and attributes.
HTML heading, body, title, paragraphs, formatting and fonts tags.
Tags for Images and tables.
Creating Lists and frames.
Creating hyperlinks.
Tags to create forms and form objects.

UNIT-6 DHTML:-
Introduction to DHTML
• Advantages of DHTML
• Components of DHTML
  o HTML
  o CSS
  o Scripting
  o DOM
• Events- Mouse events
• DHTML in Layer TAG
• Layer Attributes
• The Style Object of IE
• Dynamic Contents in IE4
• Introduction to CSS.

Reference Books :
1. Fundamentals of Information Technology — Galgotia Publications
2. Computer Networks — A.Tenenbaum
COMPUTER SCIENCE & ENGINEERING

II YEAR

PAPER-III: INTERNET TECHNOLOGIES (PRACTICAL)

PERIODS PER WEEK: 4 PERIODS PER YEAR: 115

<table>
<thead>
<tr>
<th>S.NO.</th>
<th>UNITS</th>
<th>NO.OF PERIODS</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Familiarization with network components</td>
<td>10</td>
</tr>
<tr>
<td>2</td>
<td>Basic troubleshooting of a PC, CMOS setup, Formatting, Partitioning a hard disk and loading OS</td>
<td>20</td>
</tr>
<tr>
<td>3</td>
<td>Configuring LAN</td>
<td>15</td>
</tr>
<tr>
<td>4</td>
<td>Browsing, E mail and File Transfer</td>
<td>25</td>
</tr>
<tr>
<td>5</td>
<td>Creating web pages using HTML</td>
<td>25</td>
</tr>
<tr>
<td>6</td>
<td>DHTML</td>
<td>20</td>
</tr>
</tbody>
</table>

Total 115

Note: After completion of every unit one/two assignments will be given to the students

Additions / Deletion / Changes

1. Unit no. 2 “Basic troubleshooting of a PC, CMOS setup, Formatting, Partitioning a hard disk and loading OS” has been added to enable the student to attend to basic hardware related problems, maintenance of PCs and also to resolve any software issues independently.

2. “Configuring LAN” which has been added is very much the order of the day to connect LANs and maintain them and hence this unit has been added.

3. Units 5 and 6 have been added to supplement the same theory units.
1. Exposure to Network connectivity Hardware and Devices.
2. Network devices such as
   - Modem
   - Network cards
   - Lan cards.
3. Dial up and ISDN connections
4. Usage of Public Internet Services for the following
   - E-Mail
   - Internet Fax
   - Web Surfing
   - File Transfer
   - Creating and hosting a web page.
5. Connecting or configuring Simple LAN’s

6. Writing HTML code using the following:
   1. Basic Tags for a website – Html, Head, Title and Body
   2. Tags for Text - `<p>`, `<br>`, `<blockquote>`, Headings `<h1>…<h6>`, Bold and italic tags, Horizontal line tags
   3. Tags for creating lists - Ordered Lists, Unordered Lists
   4. Tags for creating hyperlinks
   5. Tags for creating and modifying images
   6. Tags for creating Tables
   7. Tables for creating frames Tags for creating forms

1. Writing DHTML code for the following:
   - Create a webpage with HTML to display current date and time using document.Write()
   - Change an HTML element – change the content of a h1 element using javascript
   - Change the ‘src’ attribute of an image from one picture to a second using javascript
   - Change the content of the h1 element when a user clicks on it
   - Change Style of the Current HTML Element
   - Writing code to change the visibility of text on a page
   - Writing code to change the background colour of a page
   - Writing code to change the objects properties on events like onclick, ondblclick, onmousemove etc.
   - Create a form that accepts data and copies it to other controls on clicking a button
   - Create dropdown menus to link to relevant websites.
COMPUTER SCIENCE & ENGINEERING SYLLABUS

07. LIST OF EQUIPMENT

HARDWARE, TOOLS AND EQUIPMENT:

1. Pentium-i5 or latest processor with at least 4 GB RAM, 512 GB Hard disk space, 17” LED Color Monitor, USB Key board, USB Optical Mouse, CD/DVD R/W Drive, at least 6 USB ports onboard Sound, Graphics, Modem and Network adaptor preloaded with Windows 7 Operating system supplied with media kit and antivirus software. 21 Nos (20 for students and one for the teacher).
2. Online UPS 2 KVA One no.
3. LCD Projector and screen One no.
4. 16 Port Switch Two nos.
5. Laser Printers Two nos.
6. Flatbed Scanner One No.
7. Web Cam One No.
8. Crimping tool for network cables One No.

SOFTWARE (LATEST VERSIONS)

1. Latest versions of the following software
2. MS Office 2010
3. Turbo C
4. Tally
5. Adobe PageMaker
6. Adobe Photoshop
7. AutoCAD

FURNITURE

1. Air conditioners 1.5 Ton 02 Nos
2. Computer Tables 21 Nos
3. Operator’s Chairs 21 Nos
4. Printer tables 02 Nos
5. Steel cupboards 01 Nos
6. Library book case with lock facility 01 Nos
7. Tables for Staff members 02 Nos
8. Chairs for Staff members 02 Nos
9. Vacuum cleaner 01 Nos
10. Shoe Rack (to accommodate at least 20 pairs) 01 Nos

CONSUMABLES

1. Print cartridges as per requirement
2. Printer Paper as per requirement
3. Pen drives of required storage size 4 Nos.
4. Different types of network cables as per requirement
5. CDs and DVDs as per requirement
6. RJ 45/ or compatible connectors for network cabling as per requirement.

LAB INFRASTRUCTURE

Computer center 20’ X 25’ or subject to the availability of accommodation but minimum of 20’ x 20’ with false roofing and flooring.
High Speed Internet connection is required not only for training in internet technologies but also to expose the students to acquire latest knowledge about latest updates available, antivirus and other security tools and for troubleshooting tips on a need basis.

**COMPUTER SCIENCE & ENGINEERING**

8 (a) **COLLABORATING INSTITUTIONS FOR CURRICULUM TRANSACTIONS**
- DTP centers locally available
- Data conversion centers

8(b) **ON THE JOB TRAINING CENTERS**
- Software development centers
- Universities
- Public sector companies
- Small Scale Industries

9. **QUALIFICATION OF LECTURERS:**
2. B.E. /B.Tech [IT].

**Equivalency:**
In the new curriculum 2012 there is no equivalency paper to any paper. Hence the old syllabi students will be given two chances to clear their backlogs (i.e. March & ASE 2013) for I year and (March & ASE 2014) for II year.

10. **VERTICAL MOBILITY**
- Eligible to appear EAMCET on par with MPC students by appearing Bridge Course
- Can enter into B.Sc(CS/IT), B.E/B.Tech, Polytechnic 2\textsuperscript{ND} year on completion of Bridge course
- B.Com(Comp) , BCA etc. without bridge course.
- Eligible to attend A Level course recognized by DOEACC.
COMPUTER SCIENCE & ENGINEERING
11. LIST OF REFERENCE BOOKS

1. Engineering Drawing — N.D.Bhatt
2. AutoCAD -
3. Fundamentals of Information technology — M.L. Sai Kumar
5. Computer and commonsense — Hunt & Shelly
6. Understanding Computers — Dinesh Kumar
7. Computers Today — Sandesson
8. Programming in – Kerningham and Ritchie
9. Programming in C — E. Balaguruswamy
10. Let Us “C” — Yashwanth Kanetkar
11. Data Base Management System — C.J. Date
12. Data Base Management System — Korth and Sudershan
14. Adobe Pagemaker - Adobe publications
15. Adobe Photoshop - Adobe publications
16. DTP with Pagemaker - BPB Publications
17. Image editing with Photoshop - BPB Publications
19. Computer Networks — Andrew .S. Tanenbaum
20. Software Engineering — Roger Pressman
21. Software Engineering — Shuman
22. Teach yourself Java – Techmedia publications
23. Java – complete reference –
24. HTML Primer –
25. Tally -
12. MODEL QUESTION PAPERS [THEORY & PRACTICAL]

PAPER-1: COMPUTER FUNDAMENTS & MSOFFICE [THEORY]

Time:- 3 Hrs                                                                                                               Max. Marks:- 50

SECTION-A

Note:-  1. Answer ALL Questions:  
       2. Each Question carries 2Marks.

01. Define a Computer?  
02. What is an Operating system? Name any three operating systems.  
03. What is spell check?  
04. What are the different views in MS Word?  
05. Write any 2 Text Format commands.  
06. Write number of Rows and Columns in Spreadsheet.  
07. What is Cell address?  
08. What is slideshow?  
09. Define term Query.  
10. What are data types in Access?

SECTION-B

Note:-  1. Answer any FIVE Questions from the following  
       2. Each Question carries 6Marks.

11. Draw the block diagram of computer and explain each block in it.  
12. Write any 6 DOS Commands with proper syntax and examples.  
13. Explain Edit menu commands in Ms Word.  
14. Explain Mail merge procedure with an example  
15. Explain different types of Charts in Excel  
16. Explain any five statistical functions in Excel.  
17. What is presentation? Write the procedure for perfect presentation.  
18. Write a procedure for creation relationship between tables
COMPUTER SCIENCE & ENGG- 1ST YEAR

PAPER-2: PROGRAMMING C[ THEORY]

Time:- 3 Hrs                                                                                                             Max. Marks:- 50

SECTION-A
Note:-  1. Answer ALL Questions:                                                                                       10 x 2=20
        2. Each Question carries 2Marks.
01. Define Algorithm?
02. Write the symbols of Flowchart with purpose.
03. What are the basic data types in C?
04. What is loop in C
05. Write the syntax of SWITCH statement
06. What is Recursion?
07. What is Library function? Name any two functions.
08. What is an Array??
09. What are applications of two dimensional Arrays?
10. Define Union.

SECTION-B
Note:-  1. Answer any FIVE Questions from the following                5 x 6= 30.
        2. Each Question carries 6Marks.
11. Write an algorithm for biggest of given three numbers
12. Explain various types of operators in c .
13. Explain various looping statements in c
14. Explain branching statements in C
15. Define function. Explain various types of functions in C
16. Write C Program to generate Fibonacci series using recursion.
17. Write a C program for matrix addition of two matrices.
COMPUTER SCIENCE & ENGG- 1ST YEAR

PAPER-3: ACCOUNTANCY and TALLY [THEORY]

Time:- 3 Hrs  Max. Marks:- 50

SECTION-A

Note:- 1. Answer ALL Questions: 10 x 2=20
2. Each Question carries 2Marks

01. Define Account.
02. What is the rule of Real account?
03. Journalise the following?
   A. Stated business with cash . 1,00,000
   B. Purchase goods from Naresh 12,000
   C. Sold old Machinery 26,000
   D. Rent Paid 3,000

04. Define Posting?
05. What is Trade discount?
06. What is meant by Contra?
07. From the following information prepare opening entry of Mahesh as on 1 Jan 2011

   Cash in hand                                           6,000
   Sundry debtors                                         24,000
   Plant and Machinery                                    28,000
   Land & building                                        42,000
   Creditors                                              15,000
   Bills payable                                          5,000
   Bank loan                                              10,000

08. Define ‘Error’
09. What is adjustment?
10. What are the function keys in Tally package?

SECTION – B

Note:- 1. Answer any FIVE Questions:
2. Each Question carries 6 Marks

11. Describe the major concepts in Accounting.
12. Explain the types of accounts and their principles of debit and Credit
13. Prepare Sudhakar’s Account

   2011 Jan 1st - Amount due to Sudhakar 5,000
   4    -Goods sold to Sudhakar for cash . 800
   8    -Purchased furniture from sudhakar 13,000
   10  - Goods returned by Krishna . 1000
   14  - Purchased goods from Sudhakar . 8000
   16  - Goods returned by Sudhakar . 50
   20  - Sudhakar’s A/c. settled by cash

14. Enter following transactions in proper subsidiary Books.

   2011 Nov  
   4    - Goods purchased from Rao 1500
   6    -Sold goods to Vishnu 1000
   9    - Goods purchased from Mahesh 2000
   11  - Sold goods to Sham 1200
   13  - Returned goods to Rao 200
   15  - Sham returned goods 100
   20  - Sold goods to raju 1000
15. Enter the following transactions in Simple cash book - Vamshi traders.

<table>
<thead>
<tr>
<th>Date</th>
<th>Description</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>2011 Oct1st</td>
<td>Balance of cash</td>
<td>9000</td>
</tr>
<tr>
<td>3</td>
<td>Goods purchased</td>
<td>3000</td>
</tr>
<tr>
<td>5</td>
<td>Sales</td>
<td>2500</td>
</tr>
<tr>
<td>8</td>
<td>Interest paid</td>
<td>1000</td>
</tr>
<tr>
<td>10</td>
<td>Cash purchases</td>
<td>1500</td>
</tr>
<tr>
<td>15</td>
<td>Cash Sales</td>
<td>2000</td>
</tr>
<tr>
<td>19</td>
<td>Received cash from N</td>
<td>1800</td>
</tr>
<tr>
<td>22</td>
<td>Paid cash to R</td>
<td>1100</td>
</tr>
<tr>
<td>26</td>
<td>Purchases furniture</td>
<td>500</td>
</tr>
<tr>
<td>29</td>
<td>Received commission</td>
<td>900</td>
</tr>
<tr>
<td>31</td>
<td>Paid rent</td>
<td>1000</td>
</tr>
</tbody>
</table>

16. Prepare the Trial Balance from the following balance.

<table>
<thead>
<tr>
<th>Account</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bills receivable</td>
<td>20,000</td>
</tr>
<tr>
<td>Sales</td>
<td>1, 20,000</td>
</tr>
<tr>
<td>Plant &amp; Machinery</td>
<td>30,000</td>
</tr>
<tr>
<td>Creditors</td>
<td>8,000</td>
</tr>
<tr>
<td>Salaries &amp; Wages</td>
<td>20,000</td>
</tr>
<tr>
<td>Advertisement</td>
<td>5,000</td>
</tr>
<tr>
<td>Furniture</td>
<td>30,000</td>
</tr>
<tr>
<td>Postage &amp; Telegram</td>
<td>10,000</td>
</tr>
<tr>
<td>Purchases</td>
<td>80,000</td>
</tr>
<tr>
<td>Capital</td>
<td>1,00,000</td>
</tr>
<tr>
<td>Bank loan</td>
<td>90,000</td>
</tr>
<tr>
<td>opening stock</td>
<td>20,000</td>
</tr>
<tr>
<td>Debtors</td>
<td>40,000</td>
</tr>
<tr>
<td>Rent &amp; Taxes</td>
<td>6,000</td>
</tr>
<tr>
<td>Building</td>
<td>40,000</td>
</tr>
<tr>
<td>Insurance</td>
<td>12,000</td>
</tr>
<tr>
<td>Commission paid</td>
<td>5,000</td>
</tr>
<tr>
<td>Gross profit</td>
<td>30,000</td>
</tr>
</tbody>
</table>

17. Prepare profit & loss account of GIRI for the year ended 31.12.2010

<table>
<thead>
<tr>
<th>Item</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Salaries</td>
<td>-3000</td>
</tr>
<tr>
<td>Carriage on Sales</td>
<td>1000</td>
</tr>
<tr>
<td>Discount allowed</td>
<td>500</td>
</tr>
<tr>
<td>Commission paid</td>
<td>1500</td>
</tr>
<tr>
<td>Bad Debts</td>
<td>1000</td>
</tr>
<tr>
<td>Repairs</td>
<td>1000</td>
</tr>
<tr>
<td>Advertisement</td>
<td>1500</td>
</tr>
<tr>
<td>Audit fees</td>
<td>500</td>
</tr>
<tr>
<td>general expenses</td>
<td>1000</td>
</tr>
<tr>
<td>postage</td>
<td>2000</td>
</tr>
<tr>
<td>printing &amp; stationary</td>
<td>600</td>
</tr>
<tr>
<td>commission received</td>
<td>400</td>
</tr>
<tr>
<td>rent received</td>
<td>3000</td>
</tr>
<tr>
<td>Insurance premium</td>
<td>900</td>
</tr>
<tr>
<td>office electricity Charges</td>
<td>300</td>
</tr>
<tr>
<td>gross profit</td>
<td>30,000</td>
</tr>
</tbody>
</table>

18. Explain the procedure to create company account.
COMPUTER SCIENCE & ENGG- 2ND YEAR

PAPER-1: OOPS and JAVA [THEORY]

Time:- 3 Hrs  Max. Marks:- 50

SECTION-A
Note:- 1. Answer ALL Questions:
2. Each Question carries 2Marks.
1. Mention them access specifies in Java.
2. Define a constructor.
3. Define an Array.
4. Define Polymorphism.
5. Define an interface.
6. Mention the names of any two Exception Handling functions.
7. Define a thread.
8. Define an Applet.
9. Expand the term AWT.
10. Mention any two button events.

SECTION - B  5 x 6 = 30
Note:- 1. Answer ANY FIVE Questions:
2. Each Question carries 6 Marks.
11. Describe the main features of OOPS.
12. Describe the main data types in Java.
13. Create a method that adds two integers supplied to it and returns the sum to the calling object.
14. Describe the Switch statement in Java with an example.
15. Describe the use of break and continue statements with an example each
16. Explain Inheritance with an example.
17. Explain Packages in Java with an example.
18. Describe about any two methods of an Applet Class.
COMPUTER SCIENCE & ENGG- 2ND YEAR

PAPER-2: RELATIONAL DATA BASE MANAGEMENT SYSTEM. [THEORY]

Time:- 3 Hrs                                                                                                          Max. Marks:- 50

SECTION-A                                                     10 x 2=20

Note:-   1. Answer ALL Questions:
          2. Each Question carries 2Marks.
01. Define DBMS.
02. What is Entity and Relationship?
03. What are different types symbols used in E-R Diagram
04. What are the different types of attributes in relational model?
05. What are the unary operations in relational model?
06. Write the structure of SQL
07. What are basic operations in SQL?
08. What is Trigger?
09. Define System.
10. What is Questionnaire in System analysis?

SECTION - B                                                    5 x 6 = 30

Note:-  1. Answer any FIVE Questions:
          2. Each Question carries 2Marks.
11. Explain the advantages of DBMS over File processing system.
12. Write the functions of Database Administrator.
13. Draw an ER diagram to show relation between a Student and Bank.
14. Explain basic structure of Relational Model.
15. Explain Binary operations in Relational data base.
16. Explain any five DDL commands with an example
17. Explain main parts of Trigger with an example
COMPUTER SCIENCE & ENGG- 2ND YEAR
PAPER-3: DATA COMMUNICATION AND COMPUTER NETWORKS [THEORY]

Time:- 3 Hrs                                                                                                        Max. Marks:- 50

SECTION-A                                                  10 x 2=20

Note:-   1. Answer ALL Questions:
2. Each Question carries 2Marks.
01. Define Data Communication.
02. What is Computer Network?
03. What ids Network Topology
04. What is HUB? Write types in it.
05. What is Internet?
06. What is the function of MODEM
07. Expand terms HTML, DHTML and WWW.
08. What is Hyperlink
09. Mention any two mouse events
10. What is CSS?

SECTION - B                                                  5 x 6 = 30

Note:-   1. Answer ALL Questions:
2. Each Question carries 2Marks.
11. Explain basic of modes of Data Transmissions
12. Explain about LAN,WAN and MAN
13. Explain Bus Topology in detail
14. Explain about ROUTER and Bridge
15. Explain about E-mail.
16. Explain the following tags with an example –FONT,IMG
17. Describe attributes of BODY Tag
18. Explain advantages of DHTML
Instructions:-
1. The maximum mark of Question paper 50.
2. The Question paper should be prepared by the External Examiner in consultation with internal examiner.
3. The Question should contain EIGHT Questions.
4. The Examiner should allot any TWO Questions from the paper to each student by drawing lots.
5. Evolution of should be done as follows.
   - Each Question carries TEN marks (i.e. 2 x 10) - 20
   - Demonstration on the System - 10
   - Record - 10
   - Viva - 10

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Total 50
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13. EQUIVALENCY OF PAPERS

FIRST YEAR

NEW PROPOSED SYLLABUS

THEORY

1. COMP. FUNDAMENTALS & MS OFFICE
2. PROGRAMMING in C
3. ACCOUNTANCY and TALLY

PRACTICAL

1. WINDOWS & MS OFFICE
2. C –PROGRAMMING
3. ENGINEERING DRAWING

EXISTING SYLLABUS

THEORY

SECOND YEAR

THEORY

1. OOPS AND JAVA
2. RELATIONAL DATABASE MANAGEMENT SYSTEM
3. DATA COMMUNICATIONS & COMPUTER NETWORKS

PRACTICAL

1. OOPS & JAVA
2. SQL, PHOTOSHOP & PAGEMAKER
3. INTERNET TECHNOLOGIES
COMPUTER SCIENCE & ENGINEERING SYLLABUS

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