



Telangana University

Syllabus of Bachelor of Science (B.Sc) Computer Science – I year

Unit - 1 : Fundamentals of Computers (24 hrs)

Computer definition – Types of Computer – Logical Organization of a Digital Computer – Memory: Main Memory : RAM, ROM and Cache – Secondary Memory : Magnetic type, Floppy disk, Hard disk, Compact disk – Input devices – Output devices – Operating system : Definition, functions of an operating system, Types of Operating systems : Brief details of batch processing, Multi Programming, multi tasking, time sharing, real time operating systems - Introduction to DOS, DOS internal commands, DOS External Commands – Introduction to Windows, Desktop, File, Folder, My Computer, My documents, Recycle bin, Internet Explorer, Windows Explorer – Types of Programming Languages.

Unit - 2: MS Word and MS Power Point (24 hrs)

Word Basics : Starting word, Creating a new document, Opening preexisting document, The parts of a word window, Typing text, Selecting text, Deleting text, Undo, Redo, Repeat, Inserting text, Replacing text, Formatting text, Cut, Copy, Paste – Printing. Formatting Your Text and Documents : Auto format, Line spacing, Margins, Borders and Shading. Working with Headers and Footers: Definition of headers and footers, creating basic headers and footers, creating different headers and footers for odd and even pages. Tables : Creating a simple table, Creating a table using the table menu, Entering and editing text in a table, selecting in table, adding rows, changing row heights, Deleting rows, Inserting columns, Deleting columns, changing column width .Graphics : Importing graphics, Clipart, Insert picture, Clip Art Gallery, using word's drawing features, drawing objects, text in drawing. Templates : Template types, using templates, exploring templates, modifying templates. Macros : Macro, Recording macros, editing macros, running a macro. Mail Merge : Mail Merge concept, Main document, data sources, merging data source and main document. Overview of word menu options word basic tool bar. Power Point : Basics, Terminology, Getting started, Views Creating Presentations : Using auto content wizard, Using blank presentation option, Using design template option, Adding slides, Deleting a slide, Importing Images from the outside world, Drawing in power point, Transition and build effects, Deleting a slide, Numbering a slide, Saving presentation, Closing presentation, Printing presentation elements.

Unit - 3 : MS Excel and MS Access (24 hrs)

MS Access

Creating a Simple Database and Tables: Creating a contacts Databases with the wiz, The Access Table Wizard, Creating Database Tables without the wizard, Field Names, Data Types and Properties, Adding, deleting fields, renaming the fields in a table. Forms: The Form Wizard, Saving Forms, Modifying Forms Entering and Editing Data: Adding Records, Duplicating previous entries without

Retyping, Undo, Correcting Entries, Global Replacements, Moving from Record to Record in a table. Finding, Sorting and Displaying Data: Queries and Dynasets, Creating and using select queries, Returning to the Query Design, Multilevel Sorts, Finding incomplete matches, Showing All Records after a Query, Saving Queries, Crosstab Queries. Printing Reports : Simple table, Form and Database printing, Defining advanced Reports, Manual Reporting, properties in Reports, Saving Reports. Relational Databases: Flat Versus Relational, Types of Relationships, Viewing Relationships, Defining and Redefining Relationships, Creating and Deleting Relationships.

MS Excel

Excel Basics: Overview of Excel features, Getting started, Creating a new worksheet, Selecting cells, Entering and editing text, Entering and editing Numbers, entering and editing Formulas, Referencing cells, moving cells, copying cells, sorting cell data, inserting rows, inserting columns, Inserting cells, Deleting parts of a worksheet, clearing parts of a worksheet. Formatting : Page setup, changing column widths and Row heights, auto format, changing font sizes and Attributes, centering text across columns, using border buttons and Commands, changing colors and shading, hiding rows and columns. Introduction to functions: Parts of a functions, Functions Requiring Add-ins, The Function Wizard. Examples functions by category: Data and time functions, Engineering functions, Math and Trig functions, Statistical functions, Text functions. Excel Charts: Chart parts and terminology, Instant charts with the chard wizard, creation of different types of charts, printing charts, deleting charts – Linking in Excel Excel Graphics: Creating and placing graphic objects, Resizing Graphics, Drawing Lines and Shapes.

Unit - 4 : C Language fundamentals (24 hrs)

Introduction – 'C' Fundamentals : Programming – High Level Languages – compiling programs – Integrated Development Environments – Language Interpreters – Compiling your first program – Running your program – understanding your first program – comments – variables, Data types, and Arithmetic Expressions : working with variables – Understanding Data types and constants – working with Arithmetic Expressions – The Assignment operators – The printf function – The scanf function - Decision making : The if statement – the if else construct – Nested if statements – The else if construct – The switch statement – Boolean variables – The conditional operator – program looping : The for statement – Relational operators – Nested for loops – The while statement – The do statement – The break statement – The continue statement – working with Arrays : Defining an array – Initializing Arrays – character Arrays – The const Qualifier – Multidimensional arrays- variable length Arrays. Working with Functions : Defining a Function-Arguments and Local variables – Returning Function Results – Function calling – Declaring Return Types and Argument types – Top Down programming – Functions and Arrays – global variables – Automatic and static variables – Recursive Functions.

Unit - 5 : Programming in C (24 hrs)

Working with structures : Defining structure – Functions and structures – Initializing structures – Array of structures- structures containing structures – structures containing Arrays – Structure variants – Character strings : Array of characters – variable length character strings – Escape characters – character strings, structures and arrays - character operations. Pointers : Defining a pointer variable – using pointers in Expressions – pointers and structures (Exclude Linked List) – Pointers and Functions – pointers and Arrays – operations on pointers – pointers and Memory address. Operations on Bits : Bit operators – Bit fields The preprocessor : The # define statement – The ## operator – The #include statement – conditional compilation. More on Data Types : Enumerated Data Types – The typedef statement – Data Type conversions Input and Output Operations in “C” : Character I/O – formatted I/O – Input and Output Operations with Files – Special functions for working with Files. Miscellaneous and

Advanced features: The Goto Statement, the null statement, working with unions- the comma operator-type qualifiers.

Prescribed Books:

1. Peter Norton, Introduction to Computers, Sixth edition, Tata McGraw Hill(2007).
2. Ron Mansfield, Working in Microsoft Office, Tata McGraw Hill (2008) (Chapters : 4 to 9, 11, 12, 13, 14, 15, 17, 18, 19, 24, 25,28, 30, 31, 33, 34, 35)
3. Stephen G. Kochan, Programming in C, Third Edition, Pearson Education (2007) (Chapters: 1 to 14, 16, 17)

Reference Books:

1. Michael Miller, Absolute Beginners Guide to Computer Basics, Fourth Edition, Pearson Education (2007).
2. Deborah Morley, Charles S.Parker, Under Standing Computers today and tomorrow, 11th Edition, Thomson (2007).
3. Ed Bott, Woody Leonhard, Using Microsoft Office 2007, Pearson Education (2007).
4. Beyron S Gottfried, Programming with C, Second Edition, Tata McGraw Hill (2007).
5. Ashok N. Kamthane, Programming with ANSI and Turbo C, Pearson Education (2008).
6. Rajaraman, Introduction to Information Technology, PHI.
7. Balaguruswamy.E, Fundamentals of Computing, TMH(2008).

Bachelor of Science (B.Sc) Computer Science - Ist Year

Productivity Tools & C Lab

Productivity Tools Lab Cycle

MS-WORD

1.Design a visiting card for Managing Director of a Company with following specification

i.Size of visiting card is 3.5" x 2"

ii.Name of a company with big font using Water Mark

iii.Phone number, fax number and e-mail address with appropriate symbols

iv.Office and residence address separated by line.

2.Create a letter head of a company

i.Name of Company on the top of the page with big font and good style

ii.Phone numbers, fax numbers, e-mail address with appropriate symbols

iii.Main products manufactured to be described at the bottom

iv.Slogans if any should be specified in bold at the bottom

3.Creation of your Bio-Data: consisting Name, email-id, Contact Address, Carrier Objective, Educational qualifications, social activities, achievements.

MS-POWERPOINT

1.Make a Power point presentation on your strengths, weaknesses, hobbies, factors that waste your time.

2.Make a Power point presentation on any Current affair (Not less than 8 slides)

3.Make a Power point presentation to represent your College profile.

4.Make a Power point presentation of all the details of the books that you had studied in B.Sc. First Year.

MS-ACCESS

1.Create a database using MS-ACCESS with atleast 5 records

TABLE1 STRUCTURE: REGISTER NUMBER NAME DOB GENDER CLASS

TABLE2 STRUCTURE: REGISTER NUMBER M1 M2 M3 M4 M5 TOTAL

Maintain the relationship between two tables with REGISTER NUMBER as a Primary Key and answer the following queries:

Show the list of students with the following fields as one query

REGISTER NUMBER NAME GENDER TOTALMARKS

2. Maintain the relationship between above two tables with REGISTER NUMBER as a Primary Key and answer the following reports:Reports must have following columns

Report1 with REGISTER NUMBER, NAME, MARKS OF ALL SUBJECTS and TOTAL

Report2 with REGISTER NUMBER, TOTAL , PERCENTAGE.

3. Create a database using MS-ACCESS with at least 5 records

TABLE1 STRUCTURE: EMP-CODE EMP-NAME AGE GENDER DOB

TABLE2 STRUCTURE: EMP-CODE BASIC-PAY

Maintain the relationship between two tables with EMP-CODE as a Primary Key generate the following reports:

REPORT1:

EMP-CODE EMP-NAME BASIC-PAY DA HRA GROSS-SALARY

REPORT2:

EMP-CODE EMP-NAME AGE GENDER GROSS-SALARY

MS-EXCEL

1.Create an electronic spreadsheet in which you enter the following decimal numbers and convert into Octal, Hexadecimal and Binary numbers Vice versa. Decimal Numbers: 35,68,95,165,225,355,375,465 Binary Numbers: 101,1101,111011,10001,110011001,111011111.

2.The ABC Company shows the sales of different products for 5 years. Create column chart, 3D-column and Bar chart for the following data

YEAR	PRODUCT-1	PRODUCT-2	PRODUCT-3	PRODUCT-4
2003	1000	800	900	1000
2004	800	80	500	900
2005	1200	190	400	800
2006	400	200	300	1000
2007	1800	400	400	1200

3.Create a suitable examination data base and find the sum of the marks(total) of each student and respective class secured by the student rules:

Pass if marks in each subject ≥ 35

Distinction if average ≥ 75

First class if average ≥ 60 but < 75

Second class if average ≥ 50 but < 60

Third class if average ≥ 35 but < 50

Fail if marks in any subject is < 35

Display average marks of the class, subject wise and pass percentage.

C-PROGRAMMING LAB CYCLE

1. Program for

i. Sum of factors of a number

ii. Sum of digits of a number

2. Program to check whether a given number is

i. Prime number or not

ii. Perfect number or not

iii. Armstrong number or not

3. Program using recursion for

i. Factorial of a given number

ii. Fibonacci series

4. Program for roots of a quadratic equation

5. Program using functions

i. With out return value

ii. With return value

iii. With parameters

iv. With out parameters

6. Program to find largest/smallest of n numbers by using arrays

7. Program for sorting an array

8. Program for matrix addition & subtraction

9. Program for matrix multiplication

10. Program for transpose of a given matrix

11. Program for (with and without string functions)

i. Comparison of two string

ii. Concatenation of two strings

iii. Length of a string

12. Program to process student information. Student structure consists Sno, Sname, Marks in 6 subjects, Total, average. Calculate total and average of n students and assign grade with following criteria.

Grade A : All pass and avg ≥ 75

Grade B: All pass and avg ≥ 60 and avg < 75

Grade C: All pass and avg ≥ 50 and avg < 60

Grade D: All pass and avg ≥ 40 and avg < 50

Grade E: If fails in one or more subjects.

13. Program for (i) Nesting of Structure (ii) Passing structures to functions.

14. Program to demonstrate (i) Unions (ii) enumerated data types.

15. Program for sum of diagonal elements of a square matrix?

16. Program to access (i) array elements (ii) Structure elements using pointers.

17. Program for sorting strings using pointers.

18. Program to count number of (i) words (ii) lines (iii) Special Characters in a given text.

19. Program to create a file to store and retrieve strings using fputs() and fgets().

20. Program to create a file to store and update employee records. The employee record consists of ENO, ENAME, DEPTNO, DEPTNAME, BASICSALARY, HRA, DA, DEDUCTIONS, TOTALSALARY and NETSALARY.

21. Program to evaluate following expressions. $1 + \frac{1}{2} + \frac{1}{3} + \frac{1}{4} + \dots + \frac{1}{n}$

22. Program to find Square root of a given no.

23. Program to create table of Triangular Numbers.

24. Program for reversing digits of a no.

25. Program for Base Conversion.