



B.Sc. (Information Technology)
B.Sc. (IT) (Semester-I)

Course Code	US1MABIT01	Title of the Course	Fundamentals of Programming Using C
Total Credits of the Course	4	Hours per Week	4

Course Objectives:	<ol style="list-style-type: none">1. To provide basic understanding of problem solving using algorithms and flowcharts.2. To impart knowledge on fundamental concepts of the C Programming language.
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Course Content		
Unit	Description	Weightage* (%)
1.	Concept of Algorithm, Flowcharts and Languages <ul style="list-style-type: none">– Concept of an algorithm and a flow chart, need and definition– Symbols used to draw a flow chart– Typical examples of flow charts and algorithms– Generations of computer languages– High-level and low-level languages– Translators– Introduction to editors and details about one of the editors	25
2.	Basics of Programming <ul style="list-style-type: none">– History and importance of C– Basic structure of a C Program– Variables and Constants– Data types in C– User-defined type declaration - typedef– Operators and expressions, type conversion– Formatted I/O statements, Assignment statements	25
3.	Decision Making, Loops and Arrays <ul style="list-style-type: none">– Decision making and branching statements– Decision making and looping statements– Arrays	25





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4.	Strings and Library Functions <ul style="list-style-type: none">– Introduction– Declaring and initializing strings– Operations on characters– String handling functions– Common standard library functions	25
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Teaching-Learning Methodology	Multiple teaching approaches: lecture and discussion, exploration and inquiry, cooperative group work, demonstrations, and presentations.
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Evaluation Pattern		
Sr. No.	Details of the Evaluation	Weightage
1.	Internal Written / Practical Examination (As per CBCS R.6.8.3)	15%
2.	Internal Continuous Assessment in the form of Practical, Viva-voce, Quizzes, Seminars, Assignments, Attendance (As per CBCS R.6.8.3)	15%
3.	University Examination	70%

Course Outcomes: Having completed this course, the learner will be able to	
1.	solve problems using algorithms and flowcharts.
2.	develop simple programs using the C Programming language.

Suggested References:	
Sr. No.	References
1.	Balagurusami: Programming in ANSI C., Tata McGraw Hill Publication, 2019.
2.	Kernighan B., Ritchie D.: The C Programming Language, Prentice Hall, 1988.
3.	Cooper H. & Mullish H: The Sprit of C, Jaico Publication House, New Delhi, 1988.





B.Sc. (Information Technology)
B.Sc. (IT) (Semester-I)

Course Code	US1MABIT02	Title of the Course	Fundamentals of Programming Using C Lab
Total Credits of the Course	4	Hours per Week	8

Course Objectives:	<ol style="list-style-type: none">1. To impart knowledge to design algorithms and flowcharts.2. To impart skill to solve simple programming problems.
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Course Content		
	Description	Weightage* (%)
	Part-1 Practical Based on US1MACIT01 (Unit-1 & Unit-2)	50%
	Part-2 Practical Based on US1MACIT01 (Unit-3 & Unit-4)	50%

Teaching-Learning Methodology	Hands on training through required ICT tools.
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Evaluation Pattern		
Sr. No.	Details of the Evaluation	Weightage
1.	Internal Written / Practical Examination (As per CBCS R.6.8.3)	-
2.	Internal Continuous Assessment in the form of Practical, Viva-voce, Quizzes, Seminars, Assignments, Attendance (As per CBCS R.6.8.3)	-
3.	University Examination	100%

Course Outcomes: Having completed this course, the learner will be able to	
1.	design algorithms and flowcharts.
2.	solve simple programming problems in C.





B.Sc. (Information Technology)
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Course Code	US1MIBIT03	Title of the Course	Basics of Web Designing
Total Credits of the Course	2	Hours per Week	2

Course Objectives:	* To impart the knowledge of the Internet, WWW and HTML5.
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Course Content		
Unit	Description	Weightage* (%)
1.	Web Page Designing - I <ul style="list-style-type: none">– Introduction to Internet, Services provided by the Internet (eMail, HTTP, FTP, Telnet, WWW),– Some basic terminology and concepts (URL, webpage, web site, web servers, web browser, search engines),– An Introduction to HTML, HTML tags, Structure of an HTML document,– Text and paragraph formatting, Ordered and Unordered lists Hyperlinks, Image	50
2.	Web Page Designing - II <ul style="list-style-type: none">– HTML tables,– Frames, Framesets,– Designing HTML forms,– Advance Elements of HTML5: !Doctype, meta, Input Controls (number, date, time, calendar, ranges),– Multimedia tags(<audio>,<video>)	50

Teaching-Learning Methodology	Material for this course will be presented using multiple teaching approaches: lecture and discussion, exploration and inquiry, cooperative group work, demonstrations, and presentations
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Evaluation Pattern		
Sr. No.	Details of the Evaluation	Weightage
1.	Internal Written / Practical Examination (As per CBCS R.6.8.3)	15%
2.	Internal Continuous Assessment in the form of Practical, Viva-voce, Quizzes, Seminars, Assignments, Attendance (As per CBCS R.6.8.3)	15%
3.	University Examination	70%

Course Outcomes: Having completed this course, the learner will be able to	
1.	have knowledge of Internet and WWW.
2.	Develop Web pages using HTML5, DHTML

Suggested References:	
Sr. No.	References
1.	Ivan Bayross, Web Enabled Commercial Applications Development using HTML, DHTML, Javascript, Perl CGI, BPB, 2004.
2.	Douglas E Comer: The Internet, PHI, Second Edition, May 2000.
3.	Xavier C: World Wide Web Design with HTML, Tata McGraw Hill Publication, 2000.
4.	Eric Meyer: Cascading Style Sheets – The Definitive Guide, O’Reilly – SPD, First Edition, 2000.
5.	Jeremy Keith, HTML 5 for Web Designers , A BOOK APART, 2010.
6.	Manuals of suitable packages.
7.	FaitheWempen , Step by Step HTML5, PHI, 2011.
8.	Thomas A. Powell, HTML& CSS: The Complete Reference, Fifth Edition,Tata McGraw-Hill, 2010.





B B.Sc. (Information Technology)
B.Sc. (IT) (Semester-I)

Course Code	US1MIBIT04	Title of the Course	Basics of Web Designing Lab
Total Credits of the Course	2	Hours per Week	4

Course Objectives:	To provide knowledge of HTML and DHTML.
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Course Content		
	Description	Weightage* (%)
	Practical Based on Web Application Development – I	100%

Teaching-Learning Methodology	Hands on training through required ICT tools.
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Evaluation Pattern		
Sr. No.	Details of the Evaluation	Weightage
1.	Internal Written / Practical Examination (As per CBCS R.6.8.3)	-
2.	Internal Continuous Assessment in the form of Practical, Viva-voce, Quizzes, Seminars, Assignments, Attendance (As per CBCS R.6.8.3)	-
3.	University Examination	100%

Course Outcomes: Having completed this course, the learner will be able to	
1.	design and Develop web pages using HTML





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Course Code	US1IDBIT05	Title of the Course	Office Automation Tools
Total Credits of the Course	2	Hours per Week	2

Course Objectives:	To introduce students to <ul style="list-style-type: none">• Conceptual Framework of Accounting & Accounting Cycle• Features of word processing, presentation tool and spreadsheets
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Course Content		
Unit	Description	Weightage* (%)
1.	Word Processing & Presentation Tools <ul style="list-style-type: none">– Introduction to Word Processing software, benefits of word processing software, examples of word processors– Working with documents: Basic operations, formatting text & paragraphs, using tables, shapes, inserting pictures, mail merge facility– Introduction to Presentation tools and their basic features– Working with presentation slide: creating, editing, formatting and previewing, inserting picture, clipart, shapes and chart, adding header, footer, animations and slide transitions ,Printing slide content	50
2	Spreadsheets <ul style="list-style-type: none">– Introduction to Spreadsheets and Spreadsheet packages– Building Spreadsheets using formulas, conditional calculations– Built-in functions– Database Utilities : sorting, filtering, extracting– Creating charts– Working with External data– Data analysis using What-if analysis– Pivot table and Pivot chart	50





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Teaching-Learning Methodology	Material for this course will be presented using multiple teaching approaches: lecture and discussion, exploration and inquiry, cooperative group work, demonstrations, and presentations
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Evaluation Pattern		
Sr. No.	Details of the Evaluation	Weightage
1.	Internal Written / Practical Examination (As per CBCS R.6.8.3)	15%
2.	Internal Continuous Assessment in the form of Practical, Viva-voce, Quizzes, Seminars, Assignments, Attendance (As per CBCS R.6.8.3)	15%
3.	University Examination	70%

Course Outcomes: Having completed this course, the learner will be able to	
1.	understand the concept of Conceptual Framework of Accounting & Accounting Cycle
2.	understand features of word processing, presentation tool and spreadsheets.

Suggested References:	
Sr. No.	References
1.	Manuals of PC software.
2.	Taxali R K : PC Software made simple for Windows, Tata McGraw-Hill Publishing Co.Ltd., 2000.
3.	Maheshwari S. N. : Introduction to Accounting, Vikas Pub. House 1986.
4.	R.L. Gupta & V. K. Gupta : Principles and practices of accounting, Sultan Chand & Sons, 2019.
5.	Rana & Dalal : Advances Accounting and Auditing :III Sudhir Prakashan Ahmedabad, 2005.
6.	J. C.Gandhi :Marketing : A managerial Introduction Tata McGraw Hill Publishing CO. Ltd. New Delhi, 1989.





B.Sc. (Information Technology)
B.Sc. (IT) (Semester-I)

Course Code	US1IDBIT06	Title of the Course	Office Automation Tools Lab
Total Credits of the Course	2	Hours per Week	4

Course Objectives:	To enable students to work with Word documents, Excel sheets and power point presentations.
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Course Content		
	Description	Weightage* (%)
	Practical Based on Office Applications	100%

Teaching-Learning Methodology	Hands on training through required ICT tools.
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Evaluation Pattern		
Sr. No.	Details of the Evaluation	Weightage
1.	Internal Written / Practical Examination (As per CBCS R.6.8.3)	
2.	Internal Continuous Assessment in the form of Practical, Viva-voce, Quizzes, Seminars, Assignments, Attendance (As per CBCS R.6.8.3)	
3.	University Examination	100%

Course Outcomes: Having completed this course, the learner will be able to	
1.	work with Word documents, Excel sheets and create power point presentations.





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Course Code	US1AEBIT07	Title of the Course	Communication Skills in English - I
Total Credits of the Course	2	Hours per Week	2

Course Objectives:	<ol style="list-style-type: none"> 1. Introduce themselves, describe person, place or situation 2. Structure sentences for variety of purposes 3. Make or respond to enquiries; raise queries as and when required 4. Write letters for specific purposes 5. Use modal auxiliaries efficaciously 6. Communicate in Active and Passive Voice precisely
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Course Content		
Unit	Description	Weightage*(%)
1.	Reading Skills, Listening & Feedback Skills, Forming Words <ul style="list-style-type: none"> – Mechanics of Reading i.e. Eye Movement and Different Reading Styles – Issues of Reading Speed and Comprehension Value – Reading Gears for different reading purposes – Skimming & Scanning Skills – Barriers to Effective Reading – Importance and purpose of Listening. – Barriers to Effective Listening. – Ways of improving Listening Skills. – Giving Feedbacks i.e Confirmatory and Corrective – Form words properly using prefixes/suffixes (See the Appendix) – Use Phrasal Verbs (See the Appendix) – Writing formal letters of invitation (inviting/accepting/declining), letters of complaint and intimation to civil authorities. 	50
2.	Writing Skills & Speaking Skills <ul style="list-style-type: none"> – Paragraph development i.e. Topics sentence and supporting sentence, attributes of a good paragraph, types of paragraphs. Writing dialogue on given topics – Use greeting and formulae in everyday conversation 	50





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	<ul style="list-style-type: none">- Notions and Functions of everyday usage- Parts of Speech, Types of Sentences, Tenses, Imperatives, Modals, Voice, Determiners, Concord, Interrogation and Negation, basic prepositions Use of Phrasal Verbs Constructions and Registers.- Connectives and Linkages	
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Teaching-Learning Methodology	Role Play, Discussion and Debate, Think Pair Share, Traditional classroom teaching as well as usage of ICT tools.
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Evaluation Pattern		
Sr. No.	Details of the Evaluation	Weightage
1.	Internal Written / Practical Examination (As per CBCS R.6.8.3)	-
2.	Internal Continuous Assessment in the form of Practical, Viva-voce, Quizzes, Seminars, Assignments, Attendance (As per CBCS R.6.8.3)	-
3.	University Examination	100%

Course Outcomes: Having completed this course, the learner will be able to	
1.	Introduce themselves, describe person, place or situation.
2.	Structure sentences for variety of purposes.
3.	Make or respond to enquiries; raise queries as and when required.
4.	Write letters for specific purposes.
5.	Use modal auxiliaries efficaciously.
6.	Communicate in Active and Passive Voice precisely.





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Suggested References:

Sr. No.	References
1.	Meenakshi Raman & Sangita Sharma, Technical Communication; Principles and Practice, Oxford University Press.
2.	Chrissie Wright, Communication Skills, Jaico Publication.
3.	Grant Taylor, English Conversation Practice, New Delhi: Tata McGraw Hill.
4.	R P Bhatanagar and R T Bell, Communication in English, Hyderabad, Orient Longman.
5.	D Sasikumar and P V Dhamija, Spoken English, New Delhi: Tata McGraw Hill.
6.	M. Farhathullah, Communication Skills for Technical Students.
7.	Champa Tickoo and Jaya Sasikumar, Writing with a Purpose, Chennai, OUP.
8.	David Jolly, Writing Tasks: Authentic task approach to individual Writing needs, Cambridge University Press.





B.Sc. (Information Technology)
B.Sc. (IT) (Semester-I)

Course Code	US1IKBIT08	Title of the Course	Indian Knowledge Systems
Total Credits of the Course	2	Hours per Week	2

Course Objectives:	<p>The course will enable the student teachers to</p> <ul style="list-style-type: none"> • Examine the concept of Bhartiya concept of spirituality and its various paths. • Examine the Bhartiya philosophy of life derived from Shashtras (ancient scriptures) and its implications for the Bhartiya lifestyle. • Analyse the concept of Indian Knowledge Systems (IKS) and emphasize its importance in preserving and disseminating indigenous knowledge. • Highlight the contributions of IKS to the world, particularly in the fields of mathematics and astronomy. • Explore the Bhartiya wisdom related to life sciences. • Study the science of architecture in ancient India with reference to significant sites. • Provide an overview of Ayurveda, including its concepts, branches, important books, and pioneers in the field. • Explore Bhartiya literature and the Bhartiya theory of aesthetics and rasa in various art forms.
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Course Content		
Unit	Description	Weightage* (%)
1	<p>Spiritual Bharat and Introduction to IKS</p> <ul style="list-style-type: none"> • Bhartiya Concept of Spirituality : Gyaan Marg, Bhakti Marg, Karm marg, Yog Marg • Bhartiya Spiritual Thinking Leading to Unity • Bhartiya Philosophy of Life Derived from Shashtras and its Implications for Bhartiya Life Style • Introduction to IKS and Its Importance • Introduction of Various Indian Knowledge Systems 	50 %
2	<p>Contribution of IKS to the World</p> <ul style="list-style-type: none"> • Bhartiya Contribution in Mathematics and Astronomy • Bhartiya Wisdom related to Life Science: Physics, Chemistry, Botany • Bhartiya Science of Architecture with reference to Lothal, Mohan Jo Daro, Dholavira, Temple Architecture • Ayurveda : Concept, Branches, Books and Pioneers • Bhartiya Literature and Bhartiya Theory of Aesthetics and Rasa 	50 %





Teaching-Learning Methodology	Lecture-cum-discussion, Group Discussion, Presentations, Seminars, tutorials, Research Exercises
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Evaluation Pattern		
Sr. No.	Details of the Evaluation	Weightage
1.	Internal Written / Practical Examination Internal Continuous Assessment in the form of Practical, Vivavoce, Quizzes, Seminars, Assignments, Attendance	30%
2.	University Examination	70%

Course Outcomes: Having completed this course, the learner will be able to	
1.	Understand the diverse paths of spirituality in Bhartiya culture, including Gyaan Marg, Bhakti Marg, Karm Marg, and Yog Marg, and recognize their significance in individual and collective spiritual growth.
2.	Evaluate the Bhartiya philosophy of life derived from Shashtras and analyze its implications for contemporary Bhartiya lifestyles, fostering a deeper understanding of the connection between spirituality and everyday life.
3.	Explain the concept of Indian Knowledge Systems (IKS) and recognize its importance in preserving and promoting indigenous knowledge, fostering a sense of cultural identity and pride.
4.	Demonstrate knowledge of various Indian knowledge systems, such as Ayurveda, Vedic sciences, Yoga, Vedanta, and Jyotish, and appreciate their contributions to human knowledge and well-being.
5.	Recognize and appreciate the significant contributions of IKS to the world, particularly in the fields of mathematics and astronomy, and understand their impact on modern scientific advancements.
6.	Analyze the Bhartiya wisdom related to life sciences, including physics, chemistry, and botany, as described in ancient texts, and understand their relevance and potential applications in contemporary scientific research.
7.	Identify and analyze the unique architectural features and principles of ancient Indian sites like Lothal, Mohenjo-daro, Dholavira, and temple architecture, understanding their cultural, historical, and spiritual significance.





Suggested References:

- જયેન્દ્ર દવે . (૧૯૮૬). ભારતીય ચિંતકોનું શિક્ષણ ચિંતન. અમદાવાદ: યુનીવર્સિટી ગ્રંથ નિર્માણ બોર્ડ
- જુગલ કિશોર શર્મા. (૨૦૦૦). પુષ્યભૂમિ ભારત. કર્ણાવતી: સાધના પુસ્તક પ્રકાશન
- સ્વામી વિદિતાત્માનાન્દજી (૧૯૯૪). ભારતને ઓળખીએ. અમદાવાદ: રીલાયેબલ પબ્લીકેશન
- Radhakrishnan, S. (1992). The Hindu View of Life. HarperCollins Publishers.
- Singh, A. P., & Yagnik, S. (Eds.). (2019). Indian Knowledge Systems: Understanding the Human Uniqueness. Springer.
- Frawley, D., & Ranade, S. (2001). Ayurveda, Nature's Medicine. Lotus Press.
- Lad, V., & Frawley, D. (1986). The Yoga of Herbs: An Ayurvedic Guide to Herbal Medicine. Lotus Press.
- Dasgupta, S. (1947). A History of Indian Philosophy. Cambridge University Press.
- Pollock, S. (2006). The Language of the Gods in the World of Men: Sanskrit, Culture, and Power in Premodern India. University of California Press.
- Sarma, K. V. (2008). Indian Astronomy: A Source-Based Approach. National Council of Education Research and Training.
- Narlikar, J. V., & Padmanabhan, T. (Eds.). (2016). Development of Physics in India. Springer.
- Mahdihassan, S. (1982). Ancient Indian Botany: Its Bearing on Art and Literature. Deccan College Post-Graduate and Research Institute.

Online References :

- Indian Knowledge Systems Vol 1 <https://iks.iitgn.ac.in/wp-content/uploads/2016/01/Indian-Knowledge-Systems-Kapil-Kapoor.pdf>
- <http://www.indianscience.org/index.html>
- Traditional Knowledge Systems of India <https://www.sanskritimagazine.com/india/traditional-knowledge-systems-of-india/>
- <https://orientviews.wordpress.com/2013/08/21/how-colonial-india-destroyed-traditional-knowledge-systems/>
- <https://www.thebetterindia.com/63119/ancient-india-science-technology/>
- <https://orientviews.wordpress.com/2013/08/21/how-colonial-india-destroyed-traditional-knowledge-systems/>





B.Sc. (Information Technology)
B.Sc. (IT) (Semester-I)

Course Code	US1SEBIT09	Title of the Course	Fundamentals of Computer Organization and Architecture
Total Credits of the Course	2	Hours per Week	2

Course Objectives:	<ol style="list-style-type: none">1. To provide basic understanding of logical organization and architecture of a computer.2. To introduce fundamental concepts related to number systems and representation of information.
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Course Content		
Unit	Description	Weightage* (%)
1.	Introduction to Computer Systems, Number Systems, Representation of Information and Processor Organization <ul style="list-style-type: none">– Block diagram of a simple computer and significance of different functional units– Definitions of the terms: hardware, software– Binary, octal, decimal, and hexadecimal number systems– Conversion of numbers : binary to decimal, decimal to binary– Addition and subtraction of binary numbers– Representation of integers– Character codes (ASCII, Unicode)– Instruction execution cycle– CPU organization– Array processors	50
2.	Memory Organization, Addressing Techniques and I/O Devices <ul style="list-style-type: none">– Primary memory: Introduction to RAM & ROM, Cache, Registers– Secondary memory: Various types and organization of secondary storage devices such as magnetic disks, optical disks, flash memories– Addressing techniques like Immediate, Direct, Indirect, Register, Indexing and Stack– Common types of Input / Output devices, such as Monitors,	50





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	keyboard, mouse, Printers, (Line, Dot Matrix, Inkjet, Laser), Scanners	
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Teaching-Learning Methodology	Multiple teaching approaches: lecture and discussion, exploration and inquiry, cooperative group work, demonstrations, and presentations
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Evaluation Pattern		
Sr. No.	Details of the Evaluation	Weightage
1.	Internal Written / Practical Examination (As per CBCS R.6.8.3)	-
2.	Internal Continuous Assessment in the form of Practical, Viva-voce, Quizzes, Seminars, Assignments, Attendance (As per CBCS R.6.8.3)	-
3.	University Examination	100%

Course Outcomes: Having completed this course, the learner will be able to	
1.	understand the fundamental concepts related to organization of a computer system.
2.	understand the fundamental concepts related to number systems and representation of information.

Suggested References:	
Sr. No.	References
1.	Tanenbaum A.S., Structured Computer Organization, Prentice-Hall of India Pvt Ltd, 5 th edition, 2005.
2.	Rajaraman V, Computer Fundamentals, Prentice-Hall of India Pvt Ltd(4 th Edition), 2003.
3.	P.K. Sinha, Priti Sinha, Computer Fundamentals, 6 th Edition, 2003.

