M1-R4: IT TOOLS AND BUSINESS SYSTEMS

Objective of the Course

The goal of this course is to present overview of IT tools used in day to day use of computers and data base operations. The Course has been designed to provide knowledge on various hardware and software components of computer, operating system, various packages used for different applications, data base concepts & operations and various issues related to IT and application of IT.

At the end of the course the students will be able to:-

- Acquire the foundation level knowledge required to understand computer and its operations.
- Understand the hardware and software components of the computer.
- Understand the basic concept of operating system and get knowledge about various different operating systems.
- Understand to use the packages of word processing, spread sheet and presentation in detail.
- Understand various data base concepts and operations.
- Understand the issues related to IT and IT applications.

Outline of Course

S. No.	Topic	Minimum number of hours
1.	Computer Appreciation	04
2.	Computer Organization	06
3.	Operating System	13
4.	Word Processing	06
5.	Spreadsheet Package	09
6.	Presentation Package	05
7.	Data Base Operations	13
8.	Information Technology and Society	04

Lectures	**=**	**60**	
Practical/Tutorials	**=**	**60**	
Total	**=**	**120**	

Detailed Syllabus

1. Computer Appreciation   04Hrs.
Characteristics of Computers, Input, Output, Storage units, CPU, Computer System, Binary number system, Binary to Decimal Conversion, Decimal to Binary Conversion, ASCII Code, Unicode.

2. Computer Organization   06 Hrs.

Central Processing Unit - Processor Speed, Cache, Memory, RAM, ROM, Booting, Memory- Secondary Storage Devices: Floppy and Hard Disks, Optical Disks CD-ROM, DVD, Mass Storage Devices: USB thumb drive. Managing disk Partitions, File System Input Devices - Keyboard, Mouse, joystick, Scanner, web cam, Output Devices- Monitors, Printers – Dot matrix, inkjet, laser, Multimedia- What is Multimedia, Text, Graphics, Animation, Audio, Images, Video; Multimedia Application in Education, Entertainment, Marketing. Names of common multimedia file formats, Computer Software- Relationship between Hardware and Software; System Software, Application Software, Compiler, names of some high level languages, free domain software.

3. Operating System   13 Hrs.
Microsoft Windows- An overview of different versions of Windows, Basic Windows elements, File management through Windows. Using essential accessories: System tools – Disk cleanup, Disk defragmenter, Entertainment, Games, Calculator, Imaging – Fax, Notepad, Paint, WordPad. Command Prompt- Directory navigation, path setting, creating and using batch files. Drives, files, directories, directory structure. Application Management: Installing, uninstalling, Running applications. Linux- An overview of Linux, Basic Linux elements: System Features, Software Features, File Structure, File handling in Linux: H/W, S/W requirements, Preliminary steps before installation, specifics on Hard drive repartitioning and booting a Linux system.

4. Word Processing   06 Hrs.
Word processing concepts: saving, closing, Opening an existing document, Selecting text, Editing text, Finding and replacing text, printing documents, Creating and Printing Merged Documents, Character and Paragraph Formatting, Page Design and Layout.

Editing and Profiling Tools: Checking and correcting spellings. Handling Graphics, Creating Tables and Charts, Document Templates and Wizards.

5. Spreadsheet Package   09 Hrs.
Spreadsheet Concepts, Creating, Saving and Editing a Workbook, Inserting, Deleting Work Sheets, entering data in a cell / formula Copying and Moving from selected cells, handling operators in Formulae, Functions: Mathematical, Logical, statistical, text, financial, Date and Time functions, Using Function Wizard.

Formatting a Worksheet: Formatting Cells – changing data alignment, changing date, number, character or currency format, changing font, adding borders and colors, Printing worksheets, Charts and Graphs – Creating, Previewing, Modifying Charts.

Integrating word processor, spread sheets, web pages.

6. Presentation Package   05 Hrs.
Creating, Opening and Saving Presentations, Creating the Look of Your Presentation, Working in Different Views, Working with Slides, Adding and Formatting Text, Formatting Paragraphs, Checking Spelling and Correcting Typing Mistakes, Making Notes Pages and Handouts, Drawing and Working with Objects, Adding Clip Art and other pictures, Designing Slide Shows, Running and Controlling a Slide Show, Printing Presentations.

7. Data Base Operations   13 Hrs.

Data Manipulation-Concept: Database, Relational Database, Integrity. Operations: Creating, dropping, manipulating table structure. Manipulation of Data: Query, Data Entry Form, Reports.

8. Information Technology and Society   04 Hrs.
Indian IT Act, Intellectual Property Rights – issues. Application of information Technology in Railways, Airlines, Banking, Insurance, Inventory Control, Financial systems, Hotel management, Education, Video games, Telephone exchanges, Mobile phones, Information kiosks, special effects in Movies.

RECOMMENDED BOOKS

MAIN READING

1. P.K. Sinha and P. Sinha, " Foundations of Computing" , BPB Publication, 2008.
2. Sagman S, "MS Office for Windows XP", Pearson Education, 2007.
3. ITL Educational Society, "Introduction to IT", Pearson Education, 2009.
4. Miller M, "Absolute Beginners Guide to Computer Basics", Pearson Education, 2009.

SUPPLEMENTARY READING

1. Turban, Mclean and Wetherbe, "Information Technology and Management" John Wiely & Sons**.**
2. Mansfield Ron, "Working in Microsoft Office", 2008, Tata McGraw-Hill
3. Balagurusamy E, "Fundamentals of Computers", 2009, Tata McGraw-Hill
4. Mavis Beacon, "All-in-one MS Office" CD based views for self learning, BPB Publication, 2008
5. Perry G, "MS Office 2007", Pearson Education, 2008.
6. D'Suoza & D'souza, "Learn Computer Step by Step", Pearson Education, 2006.
7. Kulkarni, "IT Strategy for Business", Oxford University Press

Refer: Open Office/ MS Office Environment for practice.

M1-R4 IT TOOLS AND BUSINESS SYSTEMS

Model Question Paper

NOTE:

1.	There are **TWO PARTS** in this Module/Paper. **PART ONE** contains **FOUR** questions and **PART TWO** contains **FIVE** questions.
2.	**PART ONE** is to be answered in the **TEAR-OFF ANSWER SHEET** only, attached to the question paper, as per the instructions contained therein. **PART ONE** is **NOT** to be answered in the answer book.
3.	Maximum time allotted for **PART ONE** is **ONE HOUR**. Answer book for **PART TWO** will be supplied at the table when the answer sheet for **PART ONE** is returned. However, candidates, who complete **PART ONE** earlier than one hour, can collect the answer book for **PART TWO** immediately after handing over the answer sheet for **PART ONE**.

TOTAL TIME: 3 HOURS   **TOTAL MARKS: 100**
                                                          (PART ONE - 40; PART TWO - 60)

PART ONE
(Answer ALL Questions; each question carries ONE mark)

1.   Each question below gives a multiple choices of answers. Choose the most appropriate one.

1.1   Which type of software provides additional functionality to your operating system?
    a)   System software
    b)   Operating system software
    c)   Utility software
    d)   Application software

1.2   Which of the following detects the presence or absence of a mark in a predetermined place?
    a)   Pointing stick
    b)   Bar code reader
    c)   Optical mark reader
    d)   Trackball

1.3   To create a capital letter, you must use which special key simultaneously with the letter key?
    a)   Enter
    b)   Esc
    c)   Tab
    d)   Shift

1.4   What type of software would you need to create an invitation to your birthday party?
    a)   Spreadsheet
    b)   Database
    c)   Word processing
    d)   Desktop publishing

1.5 In a word processing program, word wrap refers to:
 a) Typing that extends beyond the right margin then automatically continues onto the next line.
 b) Finishing a document.
 c) Words that are unacceptable.
 d) Words with too little space between them.

1.6 A space near the top of the spreadsheet where the formulas or other information in the active cell can be viewed is called the:
 a) address label
 b) title bar
 c) entry bar
 d) active cell

1.7 What is the binary number for the decimal number 217 ?
 a) 11011001
 b) 11101001
 c) 10110101
 d) 11000001

1.8 Which of the following translates a program written in a high-level language into machine code?
 a) an assembler
 b) a compiler
 c) an operating system
 d) an editor

1.9 Of the following components of a computer, which one performs computations?
 a) output device
 b) arithmetic/logic unit
 c) control unit
 d) memory unit

2. Each statement below is either TRUE or FALSE. Identify and mark them accordingly in the answer book.

2.1 The speed of a cpu is measured by the amount of time it takes to execute one machine cycle.
2.2 You can embed sounds, video clips, and animations into your word-processed document.
2.3 ROM doesn't lose data when you switch the computer off.
2.4 Operating systems are software systems that help make it more convenient to use computers and manage the transitions between multiple jobs.
2.5 In a computer, data is represented electronically by pulses of electricity.
2.6 The computer uses decimal number system for all computations
2.7 Hexadecimal number system is a compact representation of the binary number system.
2.8 The ASCII code for upper case and lower case alphabets is the same.
2.9 Microsoft Windows is a word processing system.
2.10 Computer memory is usually organized in bytes.

3. **Match words and phrases in column X with the nearest in meaning in column Y.**

	X	**Y**
3.1	software	a) transforming data into information
3.2	instructions	b) data that has been organized or presented in a meaningful fashion
3.3	operating system	c) any part of the computer that you can physically touch
3.4	processing	d) a set of computer programs that enables hardware to perform different tasks
3.5	information	e) the most common type of system software, it controls the way in which the computer system functions
3.6	data	f) the main circuit board in the system unit
3.7	Memory	g) the representation of a fact or idea (unprocessed information)
3.8	system software	h) holds instructions or data that the CPU processes
3.9	storage	i) processed data or information
3.10	motherboard	j) data or information that can be accessed again
		k) the set of programs that enables computer hardware devices and application software to work together
		l) steps and tasks necessary to process data into usable information

4. **Fill in the blanks in 4.1 to 4.10 below, by choosing appropriate words and phrases given in the list below:**

(a) Read	(b) magneto-optical	(c) Attachment	(d) Thesaurus	(e) backup
(f) Operating system	(g) Microprocessor	(h) Netiquette	(i) Assembler	(j) algorithm

4.1   A storage device that uses a combination of magnetic and optical (laser) technologies is a _____ storage device.

4.2   A(n) _____ is the CPU of a computer.

4.3   A(n) _____ is a program that converts an assembly language program to a machine language program.

4.4   The operation that takes data out of a specific memory location is the _____ operation.

4.5   _____ is an electronic document such as a Word file that is sent along with an email message

4.6   _____ is a part of your Word Processor that will give you a list of antonyms or synonyms for chosen words

4.7   A _____ is a copy of one or more files created as an alternate in case the original data is lost or becomes unusable.

4.8   _____ involves respecting others' privacy and not doing anything online that will annoy or frustrate other people.

4.9   _____ is the software that communicates with computer hardware on the most basic level.

4.10 An _____ is a set of instructions, sometimes called a procedure or a function, that is used to perform a certain task on a computer.

PART TWO
(Answer ANY FOUR questions)

5.
  a. Differentiate between (i) Control Unit and Arithmetic Logic Unit (ALU) (ii) Volatile Storage and Non volatile Storage (iii) System Software and Application Software (iv) Impact and non impact printer
  b. What are the components of Central Processing Unit? What are their functions?

(8+7)

6.
  a. What are the principal functions of an Operating System? What is a multitasking operating system
  b. Give the differences between compiler and interpreter?
  c. As working with Linux OS all files and directories have security permissions; what are those and how <u>chmod</u> command helps in operating all those permissions?

(5+5+5)

7.
  a. What is a template and what are the advantages and disadvantages of using one?
  b. What is mail merge? Explain the steps to mail merge two documents using MS-WORD?
  c. What is the role of "Control Panel" in Windows?

(5+5+5)

8.
  a. What are the main functions of Database Management System (DBMS)? How will you differentiate it from File Management System?
  b. Why is data validation necessary? What are the different types of data validation checks that are kept in a programme?
  c. Define the meaning of Data Structures.

(5+5+5)

9.
  a. Explain about Animating Text and Objects on the Slides of your Presentation.
  b. What is the difference between relative and absolute references?
  c. What is the purpose of Presentation Software in edutainment? Explain the features provided by Power Point softwares of embedding video and animations.

(5+5+5)

Assignment 1.

In a library, librarian has to maintain various books. He has made various categories according to the subject. The tree structure for the various directories are shown below

Subjects
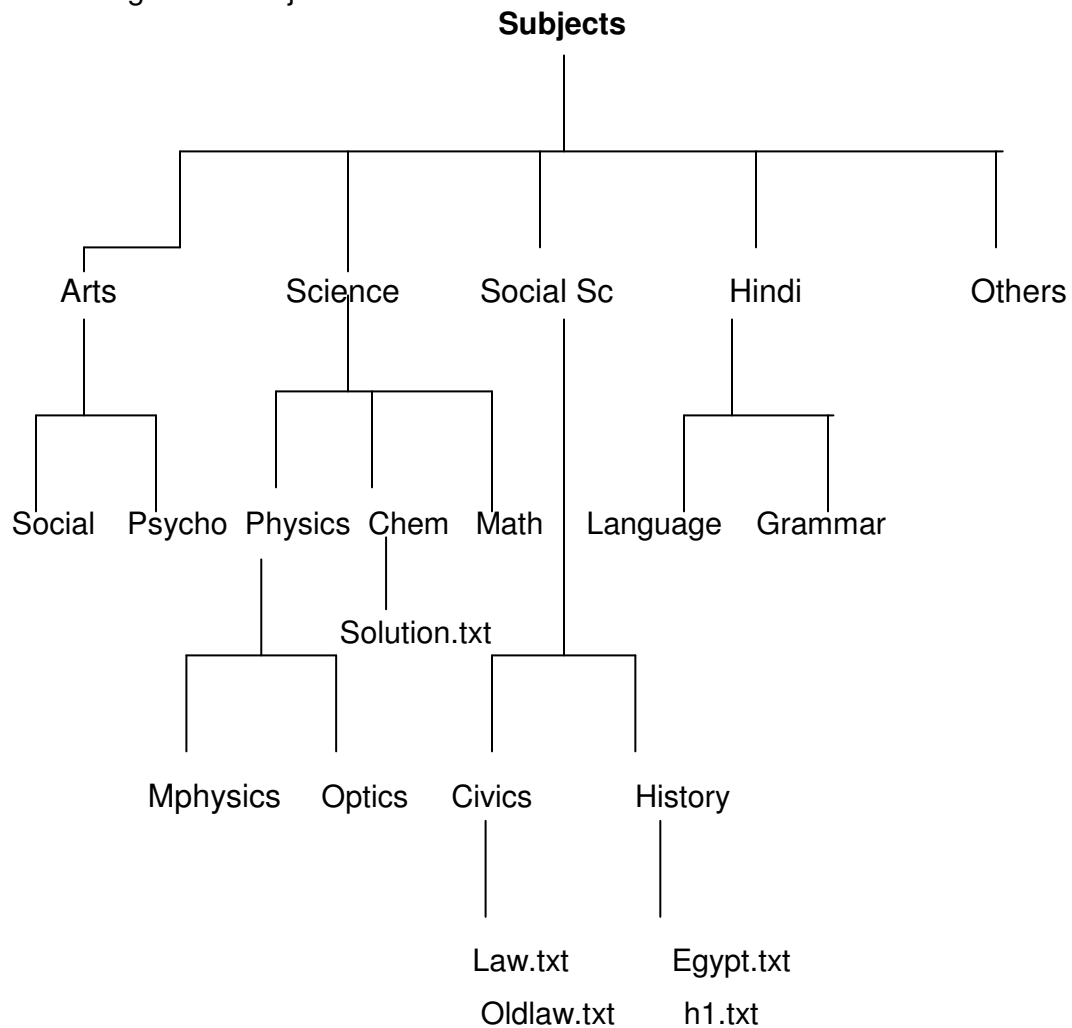
Create the above structure using DOS Commands.

Using the above tree structure do the following

(a) Imagine you are in psycho directory and from this location copy all files of Civics directory to the Others directory.
(b) List all the files of civics directory using the same location.
(c) Copy all the directories and subdirectories of SocialSc to others.

Assignment 2.

Imagine you are in the 'others' directory. From this location give the DOS commands for the following

(a) Display all the files of civics directory
(b) Delete the files from the mphysics physics
(c) Display all the files, which have extension of 'txt' under the 'math' directory.
(d) Copy the directory 'optics' under the 'mphysics' directory.

Assignment 3.

Create the following folders under the specified locations using windows.

a) D1 on desktop
b) R1 on the c: i.e. root
c) D2 on desktop
d) R2 on the c:

Do the following:

(i) Create a folder D1-1 under the D1 folder
(ii) Create a folder D2-1 under the D2 folder
(iii) Copy this D2-1 folder and paste it under R1 folder.
(iv) Delete the folder D2-1 from R1 folder
(v) Create the folder R1-1 under R1 folder
(vi) Copy R1-1 folder under the R2 folder
(vii) Rename folder R1-1 under R2 folder as 'subfolder of R2'
(viii) From the c: copy all files to folder R2
(ix) Delete all the files from the folder R2
(x) Recover all the deleted files

Assignment 4.

Do the following
(i)   Interchange the functions of left and right mouse buttons.
(ii) Change the wallpaper of your computer and set it to a paint brush file
      made by you.
(iii) Change the screen saver of your computer and change it to 'marquee' ,
      set your name as the text and wait time should be 2 minutes.

Assignment 5.

Do the following settings

a) Display pointer trails
b) Change the normal pointer of a mouse to another pointer
c) Set the date advanced by 2 months
d) Reset the system date & time
e) Set the system time late by 2 hrs: 40 minutes.

Assignment 6.

Create a document in Word on a topic of your choice. Format the document with various fonts (minimum 12, maximum 15) and margins (minimum 2, maximum 4). The document should include

      a) A bulleted or numbered list
      b) A table containing name, address, basic pay, department as column heading
      c) A picture of lion using clip art gallery
      d) An example of word art
      e) A header with student name & date
      f) A footer with pagination

Assignment 7.

Create a document with the text given below and save it as **First.Doc**

A Read only Memory is a memory unit that performs the read operation only, it does not have a write capability. This implies that binary information stored in a ROM is made permanent during the hardware production of the unit and cannot be altered by writing different words into it. Whereas a RAM is a general-purpose device whose contents can be altered during the computational process, a ROM is restricted to reading words that are permanently stored with in the unit. The binary information to be stored, specified by the designer, is then embedded in the unit to form the required interconnection pattern.

Do the following

      a) Count the occurrences of the word "ROM" in the above document.
      b) Replace ROM with Read Only Memory in the entire document
      c) Underline the text Read Only Memory
      d) Make an auto correct entry for ROM and it should be replaced by Read Only Memory

Assignment 8.

Use first.doc to perform the following operations

      a) Make the first line of document bold
      b) Make the second line italic
      c) Underline the third line
      d) Align the fourth line to center
      e) Make the font color of first line as red
      f) Change the font style of fifth line to Arial
      g) Change the second line to 18 points
      h) Insert the date & time at the start of document

Assignment 9.

Use the document earlier saved and perform the page setting as follows

    Top Margin   1.3"

Bottom margin	1.4"
Left margin	1.30"
Right margin	1.30"
Gutter margin	1.2"
Header	0.7"
Footer	0.7"
Paper size	executive
Orientation	landscape

Assignment 10.

Insert a table. The table should have 5 columns. The auto behavior should be 'Fixed column width'. The following report has to be created in the table.

Sr. No.	Name	Basic Pay	Designation	Department
1	Rahul Roy	10000/-	MD	Marketing
2	Ritu Garg	12000/-	AD	Sales
3	Mohit	8000/-	Manager	Sales
4	Rakesh	9000/-	Senior Manager	HR

(a) Heading should have a font size of 18, color should be blue and font should be bold.
(b) The data should have a font size of 12, color should be Red and font should be italic
(c) Insert a new row between 3 & 4 and type the data and reorder the sr. no. column.

Assignment 11.

Create a table in word as shown below

Roll No	Name	Marks in Physics	Marks in Chemistry	Total Marks
1	Ritu	80	70	
2	Rohit	70	80	
3	Amit	60	50	
4	Rakesh	40	60	
5	Niti	30	70	
6	Garima	80	80	

Do the following

(a) In the total marks column, entries should be calculated using formulas and it is the sum of marks in physics and marks in chemistry.
(b) Insert a new row at the end of the table and also find grand total using formula.
(c) Sort the table based on total marks
(d) The date and heading should be center aligned
(e) Heading should be in bold and underlined

Assignment 12.

Below is given a letter and some addresses, this letter is to be sent to all these addresses, so use mail merge option to do so

Addresses are:

1) Amit
   H No 424 sector 8D
   Chandigarh

2) Rohit
   H No 444, Sector 125C
   Chandigarh

3) Jyoti
   H NO 550, Sector 16A
   Chandigarh

The Letter is

To
        <<Name>>
        <<Address>>
Dear <<Name>>

        You are called for an interview on the <<Date>>at 9:00 A.M with your original documents

                                        Yours Sincerely
                                        ABC Limited
                                        Phase –7
                                        Mohali

Assignment 13.

Make a template for the bio-data with the following format

Bio-Data

Name :

Father's Name :

Date of Birth :

Age :

Address :

Educational Qualification

Sr No	Qualification	Board	Percentage

Work Experience:

Assignment 14.

Make a document with the following

1. It should have 3 pages
2. It should have bookmarks named book1, book2, and book3 for the respective pages.
3. Using go to command go to the
   i) Page no 2
   j) Bookmark named book3
4. Insert one page break on page 2 to make total no. of pages 4.
5. Insert page number at each page

Assignment 15.

(i) Make an auto correct entry so that

   a) Teh is replaced by The
   b) Nmae is replaced by Name
   c) Abouta is replaced by About a

(ii) Define a Macro 'Decorate' which makes the text bold, Red in color and italic, font size 14. Assign a shortcut key Alt + Z to this macro.

Assignment 16.

Type the following data in excel worksheet and save it as first.xls

A	B	C	D	E
513				
501				
504				
513				
511				
516				
532				
504				
432				
501				
510				
517				
479				
494				
498				

Do the following

   (a) Highlight column A and copy it to column C
   (b) Sort the data in column C in ascending order
   (c) What is the lowest number in the list (use a function)
   (d) Copy the data in column A to column E and sort it in descending order
   (e) What is the highest number in the list (use a function)
   (f) How many numbers in this list are bigger than 500 (use a database function)
   (g) How many numbers in column A are between 520 and 540 inclusive
        (use a database function)

Assignment 17.

Type the following data in excel worksheet and save it as second.xls.

A	B	C	D
People per physician	Life Expectancy		
X	Y	X * Y	

370	70.5		
6166	53.5		
684	65		
449	76.5		
643	70		
1551	71		
616	60.5		
403	51.5		

Do the following

(a) Complete column C for finding product x * y
(b) Find sum of x column at the end of data
(c) Find sum of y column at the end of data
(d) Find sum of x * y column at the end of data
(e) Find sum of x^2
(f) Find sum of y^2

Assignment 18.

Enter the following data and save it in grade .xls

Name	Marks1	Marks2	Marks3	Total	Percentage	Grade
Amit	80	70	80			
Renu	70	60	90			
Rajeev	60	50	80			
Manish	50	30	90			
Sanjeev	40	40	80			
Anita	70	70	90			

Do the following

(a) Compute the total marks and percentage of each student by entering appropriate formula.
(b) Compute the grades based on following criteria
> If percentage >= 90 then grade = A
> If percentage >= 80 and <90 then grade = B
> If percentage >= 70 and <80 then grade = C
> If percentage >= 60 and <70 then grade = D
> If percentage < 60 then grade = E

Assignment 19.

Using grade.xls to perform the following formatting operations
   (a) Draw a border around the worksheet
   (b) Change the font size of heading to 14 points and underline it and hide column c
   (c) Increase the width of column A to 15 characters
   (d) Right Align the values in column B, C, F

Assignment 20.

A university maintains a year wise result for four courses and then generates an average report as given below

Sr no.	Year	Course1	Course2	Course3	Course4	Average
1	2002	356	300	300	400	
2	2003	200	400	200	450	
3	2004	256	500	400	600	
4	2005	400	600	500	550	
5	2006	456	450	550	450	
6	Total					

   (a) Complete the report to calculate the course wise average in row 6
   (b) Provide formula to calculate year wise average in column G
   (c) Generate a column chart to compare data

Assignment 21.

A person wants to start a business and he has four schemes to invest money according to profit and years. Find out which scheme is the most profitable.

Investment Amount	Percentage for Profit	No of years
20000	10%	6 years
40000	20%	5 years
14000	30%	4 years
12000	15%	5 years

Assignment 22.

A company records the details of total sales (in Rs.) sector wise and month wise in the following format

	Jan	Feb	March	April
Sector 30	12000	17000	14000	15000
Sector 22	14000	18000	15000	16000
Sector 23	15000	19000	16000	17000
Sector 15	16000	12000	17000	18000

(a) Enter the data in a worksheet and save it as sector.xls
(b) Using appropriate formula, calculate total sale for each sector
(c) Create a 3-D column chart to show sector wise data for all four months
(d) Create a 3-D pie chart to show sales in Jan in all sectors

Assignment 23.

Type the following data and save it in employee.xls

Name	Department	Designation	Salary	Address
Anju	TRG	MD	100000	CHD
Amit	TRG	AD	200000	MOHALI
Renu	BILL	MD	300000	CHD
Anita	BILL	AD	20000	MOHALI
Shivani	S/W	MD	10000	CHD

Do the following

(a) Count the total no. of employees department wise
(b) List the name of employees whose designation is 'MD'
(c) List the name and department of employees whose address is Chandigarh
(d) List the name of employees whose salary is greater than 5000
(e) List the Address of employees whose department is 'TRG'

Assignment 24.

Using above sheet do the following

(a) Count the total no. of employees who have salary greater than 10000
(b) Count the total no. of employees who are 'MD'

(c) Find the maximum salary department wise
(d) Find the minimum salary designation wise
(e) Count the employees for each designation for each department

Assignment 25.

Create a table with the following field names in MS-Access

Name of field	Data type
Book_name	Varchar
Purchase_date	Date
Price	Numeric
Author_name	Varchar

Do the following

a) Enter 5 records in the table using forms
b) Display list of books in alphabetical order using reports
c) Display list of books in ascending order of price