National Institute of Electronics and Information Technology

Name of the Course: IT 'O' Level

Course Code: LTC-1

Duration of the Course: 1 Year (Semester System).

Yearly Session: January to June session, July to December session**.**

Fees: 15650/- (Including Registration Fees, Course fees, Examination fees, Caution Money) which is inclusive of the present Service Tax. *Note- Registration Fees, Course fees, Examination fees is free for SC/ST candidates.*

Eligibility Criteria:

Students from Institutes conducting accredited courses:
10+2 or any diploma (Govt. Recognized) of a minimum of 1 Year duration after 10th class /ITI Certificate (one year) after class 10.

Or

Successful completion of the second year of a Government recognized polytechnic engineering diploma course after class 10, followed by an accredited 'O' Level course concurrently during the third year of the said polytechnic engineering diploma course. The 'O' level certificate will be awarded only after successful completion of the polytechnic engineering diploma.

Direct Applicants

Eligibility criteria for registration of 'O' Level for graduate candidate
Any graduate from recognized university/ institute is eligible to register at 'O' level without any experience.
10+2 or any diploma (Govt. Recognized) of a minimum of 1 Year duration after 10th class /ITI Certificate (one year) after class 10, followed in each case by 1 year relevant experience.
Or
a pass in the NCVT-DP&CS (Data Preparation & Computer Software) Examination, conducted by DGE&T (Govt. of India)

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1.   **ABOUT THE REVISED SYLLABUS**

The third revised version of DOEACC syllabus came into effect in July 2003 examinations. There have been many advancements in Information Technology and consequent changes in needs of the industry in respect of which the syllabus was required to be updated.

This document presents the fourth revised version of DOEACC syllabus which becomes effective for teaching with immediate effect. This 'O' Level syllabus is designed to facilitate students in the development of concept based approach for problem solving using IT as a tool. The self learning approach is built into the syllabus, thereby training the candidates to update themselves on the changing technologies in their area of work.   The 'O' Level syllabus has been designed to produce Junior Programmers, EDP Assistants / Web Designers / lab demonstrators etc. equipped with latest knowledge and skills.

2.   **DOEACC SOCIETY**

DOEACC Society is an autonomous scientific society of the Department of Information Technology, Ministry of Communications & Information Technology, Govt. of India. The Society is registered under the Societies Registration Act, 1860. DOEACC Society is the only professional examination body in India, which accredits institutes / organizations for conducting particular course, specializing in the non-formal sector of IT education.

The office of the Society is situated at Electronics Niketan, 6, CGO Complex, New Delhi – 110 003 and number of counseling centres are situated in important cities in the country.

DOEACC is envisioned to be a premier knowledge institution pursuing human resource development activities in areas of Information Technology, Electronics and Communication Technology (IECT).

DOEACC's holistic quality policy entails offering its courses through painstakingly screened accredited institutes to ensure seriousness at both the institute and individual level. The Society has its twelve centers at 20 locations namely Agartala, Aizawl, Aurangabad, Calicut (with Southern Regional Office at Pudukkotai, Tamilnadu), Gorakhpur (with eastern Regional Office at Patna, Bihar), Imphal, Kohima/Chuchuyamlang, Kolkata, Srinagar/Jammu, Shillong, Tezpur/Guwahati, Chandigarh (Branches at New Delhi, Shimla, Lucknow). Two more DOEACC Centres at Chennai, Tamilnadu and Gangtok, Sikkim are being setup. These Centres provide quality education & training programmes in Information, Electronic Design and related technologies/areas on long term and short term basis.
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3.   **DOEACC SCHEME**

DOEACC is a joint Scheme of the Ministry of Communications & Information Technology, Department of Information Technology (erstwhile Department of Electronics) and All India Council for Technical Education (AICTE), Govt. of India.

Objective of the Scheme

The objective of the Scheme is to generate qualified manpower in the area of Information Technology (IT) at the national level, by utilizing the facilities and infrastructure available with the institutions/organizations in the non-formal sector.
The Society is managed and administered by a Governing Council which consists of eminent academicians and professionals from IT industry. Minister for Communications & Information Technology, Govt. of India, is the Chairman of the Governing Council of the Society. The Executive Director is the Chief Executive Officer of the Society and manages day to day affairs of the Society. Manifold functions of the DOEACC Scheme are:

a) Accreditation
b) Registration and
c) Examination

4.   DOEACC 'O' LEVEL COURSE

Objective of the 'O' Level Course

The objective of the course is to enable a student to acquire the knowledge pertaining to fundamentals of Information Technology (IT Tools and Business Systems, Internet Technology and Web design, Programming and Problem Solving through 'C' Language, Application of .NET Technology, Introduction to Multimedia, Introduction to ICT Resources, a Practical and Project Work).

In order to serve the IT industry better, the DOEACC 'O' Level course has been designed to develop the basic skills for the above.

The career options available to a DOEACC 'O' level qualifiers are:

- Junior Programmer
- EDP Assistant
- Web Designer
- Lab Demonstrator

DOEACC 'O' Level Course consists of four theory modules (three compulsory modules and one elective module), one Practical and one Project. The structure of the 'O' Level syllabus is indicated below:-

DOEACC 'O' LEVEL COURSE STRUCTURE

The structure of the 'O' Level course is:

Paper Code	Subject
M1-R4	IT Tools and Business System
M2-R4	Internet Technology and Web Design
M3-R4	Programming and Problem Solving Through 'C' Language
M4-R4	Elective: (One Module out of the following three modules to be chosen)

M4.1-R4	Application of .NET Technology
M4.2-R4	Introduction to Multimedia
M4.3-R4	Introduction to ICT Resources
PR	Practical (Based on M1, M2, M3, M4 module syllabus)
PJ	Project

Duration of the Course

Minimum duration of the 'O' Level course is **One Year**.

5.   **PRACTICAL**

The students have to devote half of the total time allotted to each module of the course for the practical session. Practical assignments have been worked out for each theory module. The Practical examination will be based on the syllabi M1-R4, M2-R4, M3-R4 and M4-R4 modules of 'O' Level course.

6.   **PROJECT**

DOEACC curriculum has a project as an important component of 'O' Level course. The Project is carried out by the student under guidance and support of faculty and management of the respective Institute / Organization. It is felt that such a project provides an opportunity to the student to apply his / her knowledge and skills to real life problems (including oral and written communication skills), and as such the project should be given utmost importance and priority both by the students as well as institution faculty / management in respect of its identification, planning and implementation.

Objective of the Project

The aim of the project is to give the students an additional hand-on experience in solving a real life problem by applying knowledge and skills gained on completion of theory papers in a course at a given Level. It provides an occasion for students to develop written and communication skills, Project also helps the students to realize the importance of resource and time management, ownership of task towards deliverables, innovation and efficiency in task management apart from presentation skills. It also provides a good opportunity for students to build, enhance and sustain high levels of professional conduct and performance and evolves a problem solver frame of mind in the students. It is also felt that taking up the project by a student prepares him for a job in industry and elsewhere.

O Level project submission

The Project should be original, of real life value and not copies from existing material from any other source and a certificate to this effect duly countersigned by the Supervisor will be submitted to the DOEACC Society.

At O Level, no marks are assigned to the Project. However, the candidates are expected to carry out a project successfully and submit certificate in the prescribed format from the head of the institute running the accredited course or the

organization of which the candidate is an employee. Proforma of the Project Completion Certificate is given below;

Proforma of the Project Completion Certificate

This is to certify that the Project work done at _____ by Mr./Ms._____ (DOEACC Registration No._____) in partial fulfillment of DOEACC 'O' Level Examination has been found satisfactory.

This report has not been submitted for any other examination and does not form part of any other course undergone by the candidate.

It is further certifies that he / she has appeared in all the four modules of DOEACC 'O' Level examination.

Signature
Name:
(By head of the institution with PROV No. /FULL No.) or
                                        by
Head of the Organization / Division
Name of the Organization:
Address:

7.   CREDIT SCHEME FOR DOEACC 'O' LEVEL COURSE

Introduction

A credit system based on the AICTE norms has been introduced for indicating the efforts required to pass a specific level of course under the DOEACC Scheme. Award of credit to a student will facilitate measurement/comparison of study hours including Theory Lectures, Tutorials and Practical Assignments put in a given module/paper/subject under the Scheme with similar course in IT in India and abroad. This will also facilitate other Universities/ Apex Accrediting bodies to consider academic and professional equivalence of DOEACC courses. This will also help students/organizations to transfer credits from DOEACC to other academic bodies and vice-versa for ensuring continuing education. Following table gives the no. of hours of Lectures/Tutorials and Practicals per week to be attended and the credits earned by the student:-

Calculation of Credits

'O' Level

Subject		L*	T/P**	No. of Credits+
M1-R4	IT Tools and Business System	3	3	5

M2-R4	Internet Technology and Web Design	3 3	5
M3-R4	Programming and Problem Solving Through 'C' Language	3 3	5

M4-R4 Elective (One out of the following three subjects to be chosen)

M4.1-R4	Application of .NET Technology	3 3	5
M4.2-R4	Introduction to Multimedia	3 3	5
M4.3-R4	Introduction to ICT Resources	3 3	5

	Total Credit (for 4 papers)		20

*L   :   No. of Lecture hours per week
**T/P   :   No. of Tutorial/Practical hours per week

+Credits = L + (T+P)/2

Notes

1.   One credit is defined as one hour of lecture of 2 hrs. of tutorials/practicals every week for one semester consisting of 20 weeks.
2.   Total No. of credits earned in a module is calculated using AICTE FORMULA (as applicable to Under Graduate Courses in IT namely
C=L + (T+P)/2 where L, T and P indicate no. of hours per week for Lectures, Tutorials and Practicals.
3.   The credit scheme was implemented from July, 2003 examinations.
4.   Fractions in Credits have been rounded to nearest integer.

8.   EXAMINATION PATTERN

The theory examination for each module under the fourth revised syllabus would be for duration of three hours and the total marks for each subject would be 100. One Practical examination of three hours duration and 100 marks. The first examination with the revised syllabus will be held in July 2010, for which teaching will commence with immediate effect.

Dates for the various activities connected with examinations will be announced on DOEACC website, well in advance of the examinations.

Laboratory/ Practical work will be conducted at Institutions / organizations, which are running the course. The Society will be responsible for holding the examination for theory and practical both for the students from Accredited Centers and student at large.

Pass Percentage

To qualify for a pass in a module, a candidate must have obtained at least 50% in each theory and practical examination.

The marks will be translated into grades, while communicating results to the candidates. The gradation structure is as below:-

Pass percentage	Grade
Failed (<50)	F
50%-54%	D
55%-64%	C
65%-74%	B
75%-84%	A
85% and over	S

Award of Certificates

The students would be eligible for the award of 'O' Level Certificate on successfully qualifying the Theory Examinations of all modules, Practical Examination and the Project. The 'O' Level Certificate is recognized as equivalent to Foundation Level Course by the Government of India for the purpose of employment vide Notification No. 43 & 49 dated 1st March, 1995 and 10th April, 1996 respectively issued by the Ministry of HRD, Government of India.

Registration

Registration is a pre-requisite for appearing in DOEACC examinations. A candidate can register at only one Level at a time to appear for the examination. Registration is only for candidates and not for institutes. Registration forms are available from the DOEACC Society free of cost and also can be downloaded from the website. The eligibility criteria for registration at 'O' Level is as follows:

Students from Institutes conducting accredited courses:

10+2 or ITI Certificate (One Year) after class 10 followed in each case, by an accredited 'O' Level course.

Or

Successful completion of the second year of a Government recognized polytechnic engineering diploma course after class 10, followed by an accredited 'O' Level course concurrently during the third year of the said polytechnic engineering diploma course. The 'O' level certificate will be awarded only after successful completion of the polytechnic engineering diploma.

Direct Applicants

10+2 or ITI Certificate (One Year) after class 10, followed in each case, by one-year relevant experience. Relevant experience connotes job experience in IT, including teaching in a recognized institution as a faculty member, excludes coaching.

Or

A pass in the NCVT-DP&CS (data Preparation & Computer Software) Examination, conducted by DGE&T(Govt. of India)

For getting registered, a candidate fulfilling the eligibility criteria should apply in the prescribed form with a photograph affixed thereon attested by a gazetted Officer/Panchayat/Bank Officer/ Centre Manager of the institute where the candidate has undergone the accredited course. The Registration application should be submitted along with attested photocopy of the certificate of highest educational qualification attained by the candidate, copy of relevant job experience certificate (in case of direct candidate) and Demand Draft drawn in favour of 'DOEACC Society' payable at New Delhi for the prescribed amount of Registration fee. Registration fee once paid is not reimbursable or adjustable against any other payment.

Registration application can be submitted throughout the year, however cut off dates are specified for submitting Registration applications for each examinations for the convenience of processing and allotting Registration Numbers.

Level	Cut off Dates	
	January Exams	July Exams
O Level	Preceding 30th June	Preceding 31st December

Accredited Institutes are allowed to submit the Registration Application Form of their candidates one month beyond the cut off dates.

Auto-upgradation:

The candidates successfully completing all papers (Theory as well as Practical) of a particular Level in a particular Examination and wish to appear in the next Examination for immediate higher Level are exempted from the above cut off dates. Such candidates can fill up examinations Form and Registration Forms for higher Levels subject to following conditions:-

a) Registration fee is not mixed/combined with Examination fee and is paid through a separate Demand Draft.
b) The facility is available to the candidates appearing through Accredited Institutes and not for direct applicants. However the facility is available to a candidate who might have completed lower level as a direct candidate and wishing to appear for immediate higher level through Accredited Institutes.
c) The facility is also not available to the candidates those who might be appearing through Accredited institute but have cleared lower level prior to the preceding exam (e.g. if a candidate has passed 'O' Level Exam in Jan, 2010 he would be eligible for this facility in case he wishes to appear for 'A' Level Examinations in July, 2010 through Accredited Institute. If, however, he had passed 'O' Level prior to Jan., 2010 Exams, this facility would not be available to him).
d) This facility would also not be available to the candidate opting for Level jumping (e.g. from 'O' to 'B' or 'A' to 'C' Levels).

Once registered at a particular level, the registration is valid for ten consecutive examinations for 'O' Level, reckoned from the specific examination as indicated in the Registration allocation letter issued to the candidates.

Registration, by itself, does not entitle a candidate to appear for an examination at the Level concerned, unless all conditions, stipulated in the examination application form, and in any other notification, relevant to the examination are fulfilled by the candidate.

Re-registration:

Candidates who are not able to clear the level within the validity period of initial registration, are allowed to re-register for once, at the same level for another full term i.e. 5 years to clear the left over papers by submitting filled in Registration application and full Registration fee within one year of the expiry of the validity period of existing Registration.

PRACTICAL EXAMINATION SCHEME

No of Practical Examination	: One
Duration of Practical Examination	:Three hour duration including viva-voce
Max. Marks	: 100 = 80(Practical) + 20(Viva Voce)
Grading	:Marks obtained by the students will be translated into the Grades as per the structure given above.

The Practical Examination will be conducted by the Society in reputed Institutions for all candidates. The institutes are obliged to facilitate the conduct of Practical Examinations and arrange infrastructure, support of its faculty and staff for the conduct of Practical Examination at their Centre.

The institutes are not allowed to charge any fee from the candidates, for the practical examination

Date(s)   :**Date(s) will be announced on the DOEACC website.**

9.   **HARDWARE REQUIREMENT FOR 'O' LEVEL COURSE**

9.1   Computer configuration recommended

Processor	:	1 GHz or higher
RAM	:	128 MB or higher
HDD	:	40 GB or higher
Monitor	:	SVGA
Mouse	:	Windows compatible
Keyboard	:	Standard
NIC	:	Standard
Optical Drive	:	Standard
Speaker, Mic, Webcam	:	Standard
CD/DVD Writer	:	Standard

9.2 Printer

Laser printer / Inkjet Printer	:	Standard
Dot matrix printer	:	Standard
OHP /LCD Projector	:	Standard
MODEM, DIAL UP/DSL	:	Standard
SCANNER	:	Standard

Sufficient number of Computers / nodes in Client server configuration mode satisfying the criteria of accreditation.

9.3 Networking

NIC	:	Standard
RJ-45 Connector	:	Standard
Crimping Tools	:	Standard
UTP/STP/Coaxial Fiber Optic Cables and their connectors	:	Standard
8/16 port Hub/Switch	:	Standard
Wi-H Router	:	Standard

10. SOFTWARE REQUIREMENT FOR 'O' LEVEL COURSE

Operating system	:	Linux / Windows / 2000/xp/vista
NOS	:	Linux / Unix / Windows /
SW Packages	:	Star Office / MS Office, Internet Explorer, Internet Explorer / Web Publishing Tool, JDK / Oracle J Developer2, AUTOCAD/CorelDraw / MS Visio, Microsoft Visual Studio .Net. Oracle / SQL Server. Standard Multimedia Tools
Compilers	:	C & C++ Compiler
Antivirus package	:	Standard

PARITY TABLE BETWEEN REVISION II (w.e.f July 1999) , REVISION III (w.e.f January 2003) and REVISION IV (w.e.f January 2010) of DOEACC Syllabus ('O' LEVEL)

Revision II		Revision III		Revision IV	
CODE	MODULES	CODE	MODULES	CODE	MODULES
M1	Elective I (one subject out of M1.1/M1.2/M1.3 is to be chosen)				
M1.1	Information Technology	M1-R3	IT Tools and Applications	M1-R4	IT Tools and Business System
M1.2	Internet and Web page Designing	M3-R3	Internet and Web Design	M2-R4	Internet Technology and Web Design
M1.3	Client Server Computing		No Equivalence	M1-R4	IT Tools and Business System
M2	Personal Computer Software	M1-R3	IT Tools and Applications	M1-R4	IT Tools and Business System
M3	Elective II (one subject out of M3.1/M3.2/M3.3 is to be chosen)				
M3.1	Business Systems	M2-R3	Business Systems	M1-R4	IT Tools and Business System
M3.2	Desk Top Publishing & Presentation Graphics		No Equivalence	M2-R4	Internet Technology and Web Design
M3.3	Computerized Financial Accounting		No Equivalence	M1-R4	IT Tools and Business System
M4	Elective III (one subject out of M4.1/M4.2/M4.3 is to be chosen)				
M4.1	Programming and Problem Solving through 'C' Language	M4.1-R3	Programming and Problem solving through 'C' Language	M3-R4	Programming and Problem Solving through 'C' Language
M4.2	Programming and Problem Solving through COBOL		No equivalent	M3-R4	Programming and Problem Solving through 'C' Language
M4.3	Programming in Visual Basic	M4.2-R3	Programming through Visual Basic	M3-R4	Programming and Problem Solving through 'C' Language

1. The above table shows the equivalence between the modules of old syllabus (Revision II & III) and the new syllabus (Revision IV).
2. Candidates would not be allowed to appear in the equivalent papers of the Revision IV (new syllabis), if they have already passed the relevant papers in earlier revision.
3. Candidates would have to pass a total of 4 papers and one practical in order to qualify 'O' Level in Revision IV syllabus.
4. Candidates would be allowed exemption in equal number of papers which they have passed in Revision II or Revision III (old syllabus) and which have no equivalence in the Revision IV (New Syllabus). In case of elective papers, candidates would be exempted in that module which includes these electives, e.g. (i) if a candidate has cleared M1.1-R2 / M1-R3 then he will be exempted module 1 of Revision IV syllabus (ii) if a candidate has cleared M3.3 and M1-R3 then he will be exempted from module 1 and any other module of his choice of the Revision IV syllabus. (iii) if a candidate has cleared M4.2 / M4.1-R3 then he will be exempted from module 3 of the Revision IV syllabus.

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 chmod 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
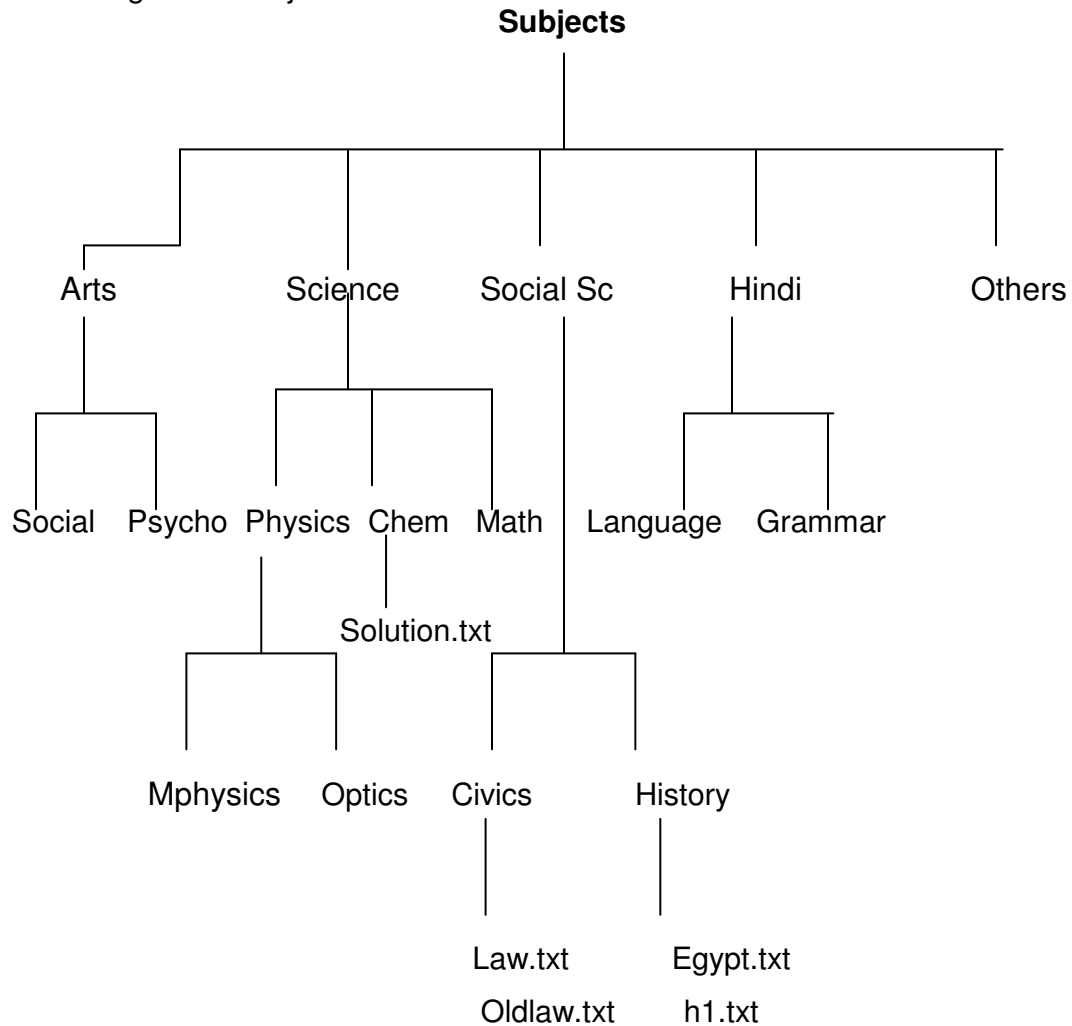
Create the above structure using DOS Commands.

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

M2-R4: INTERNET TECHNOLOGY AND WEB DESIGN

Objective of the Course

The aim of this course is to provide you the conceptual and technological developments in the field of Internet and web designing with the emphasis on comprehensive knowledge of Internet, its applications and the TCP/IP protocols widely deployed to provide Internet connective worldwide. The World Wide Web with its widespread usefulness has become an integral part of the Internet. Therefore, this course also puts emphasis on basic concepts of web design.

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

- Review the current topics in Web & Internet technologies.
- Describe the basic concepts for network implementation.
- Learn the basic working scheme of the Internet and World Wide Web.
- Understand fundamental tools and technologies for web design.
- Comprehend the technologies for Hypertext Mark-up Language (HTML).
- Specify design rules in constructing web pages and sites.
- Effectively deal with programming issues relating to VB Script, JavaScript, Java, ASP, Front Page and Flash.
- Figure out the various security hazards on the Internet and need of security measures.

Outline of Course

S. No.	Topic	Minimum number of hours
1.	Introduction to Internet	02
2.	TCP/IP – Internet Technology and Protocol	03
3.	Internet Connectivity	03
4.	Internet Network	04
5.	Services on Internet (Definition and Functions)	04
6.	Electronic Mail	07
7.	Current Trends on Internet	03
8.	Web Publishing and Browsing	10
9.	HTML Programming Basics	12
10.	Interactivity Tools	08
11.	Internet Security Management Concepts, Information Privacy and Copyright Issues	04

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

Detailed Syllabus

1. Introduction to Internet   02 Hrs.

Internet, Growth of Internet, Owners of the Internet, Anatomy of Internet, ARPANET and Internet history of the World Wide Web, basic Internet Terminology, Net etiquette. Internet Applications – Commerce on the Internet, Governance on the Internet, Impact of Internet on Society – Crime on/through the Internet.

2. TCP/IP – Internet Technology and Protocol   03 Hrs.
Packet switching technology, Internet Protocols: TCP/IP, Router, Internet Addressing Scheme: Machine Addressing (IP address), E-mail Addresses, Resources Addresses

3. Internet Connectivity   03 Hrs.
Connectivity types: level one, level two and level three connectivity, Setting up a connection: hardware requirement, selection of a modem, software requirement, modem configuration, Internet accounts by ISP: Telephone line options, Protocol options, Service options, Telephone line options – Dialup connections through the telephone system, dedicated connections through the telephone system, ISDN, Protocol options – Shell, SLIP, PPP, Service options – E-mail, WWW, News Firewall etc.

4. Internet Network   04 Hrs.
Network definition, Common terminologies: LAN, WAN, Node, Host, Workstation, bandwidth, Interoperability, Network administrator, network security, Network Components: Severs, Clients, Communication Media, Types of network: Peer to Peer, Clients Server, Addressing in Internet: DNS, Domain Name and their organization, understanding the Internet Protocol Address. Network topologies: Bust, star and ring, Ethernet, FDDI, ATM and Intranet.

5. Services on Internet (Definition and Functions)   04 Hrs.
E-mail, WWW, Telnet, FTP, IRC and Search Engine

6. Electronic Mail   07 Hrs.
Email Networks and Servers, Email protocols –SMTP, POP3, IMAp4, MIME6, Structure of an Email – Email Address, Email Header, Body and Attachments, Email Clients: Netscape mail Clients, Outlook Express, Web based E-mail. Email encryption- Address Book, Signature File.

7. Current Trends on Internet   03 Hrs.
Languages, Internet Phone, Internet Video, collaborative computing, e-commerce.

8. Web Publishing and Browsing   10 Hrs.
Overview, SGML, Web hosting, HTML. CGL, Documents Interchange Standards, Components of Web Publishing, Document management, Web Page Design Consideration and Principles, **Search and Meta Search Engines**, WWW, Browser, HTTP, Publishing Tools

9. HTML Programming Basics   12 Hrs.
HTML page structure, HTML Text, HTML links, HTML document tables, HTML Frames, HTML Images, multimedia

10. Interactivity Tools   08 Hrs.

ASP, VB Script, JAVA Script, JAVA and Front Page, Flash

11. Internet Security Management Concepts, Information Privacy and Copyright Issues
04 Hrs.

Overview of Internet Security, Firewalls, Internet Security, Management Concepts and Information Privacy and Copyright Issues, basics of asymmetric cryptosystems.

RECOMMENDED BOOKS

MAIN READING

1. Greenlaw R and Hepp E "Fundamentals of Internet and www" 2nd EL, Tata McGrawHill,2007.
2. Ivan Bayross, "HTML, DHTML, JavaScript, Perl CGI", 3rd Edition, BPB Publications.
3. D. Comer, "The Internet Book", Pearson Education, 2009.

SUPPLEMENTARY READING

1. M. L. Young,"The Complete reference to Internet", Tata McGraw Hill, 2007.
2. Godbole AS & Kahate A, "Web Technologies", Tata McGrawHill,2008.
3. Jackson, "Web Technologies", Pearson Education, 2008.
4. B. Patel & Lal B. Barik, " Internet & Web Technology ", Acme Learning Publishers
5. Leon and Leon, "Internet for Everyone", Vikas Publishing House.

M2-R4: INTERNET TECHNOLOGY AND WEB DESIGN

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 the 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 network is most likely confined to a building or a campus
   a)   Local area
   b)   Metropolitan area
   c)   Wide area
   d)   Departmental

1.2.   Which programming language always makes platforms-independent application
   a)   Java
   b)   Visual basic
   c)   C++
   d)   C

1.3.   Which best describes support over serial line communication under the TCP/IP Protocol .
   a)   SLIP
   b)   PPP
   c)   Both A,B
   d)   None

1.4.   If a group of network computers connect to a central hub the network has what type of Physical Topology
   a)   Ring
   b)   Star
   c)   Bus
   d)   None

1.5.	If a group of computer connected to a central concentrator the network has what
	type of logical topology?
	a)	Ring.
	b)	Sart
	c)	Bus
	d)	INone

1.6.	The transport layer protocol is
	a)	ALP
	b)	PPX
	c)	TCP
	d)	None

1.7.	The UDP is part of the which protocol suite
	a)	TCP/IP
	b)	IPX/SPX
	c)	Apple Talk
	d)	NetBEUI

1.8.	JDK (Java Development Kit) include .
	a)	Java
	b)	Javac
	c)	JDB
	d)	All

1.9.	Buffer over flow attacks means
	a)	Collect and relay some data
	b)	Get full system access
	c)	Play and display advertisement
	d)	Slow down system

1.10.	A firewall can be
	a)	 A Hardware
	b)	 A Software
	c)	 Both software and Hardware
	d)	 Network Engine

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

2.1.	The Word Wide Web is a very large set of interlinked hypertext documents
	accessed viahe Internet.
2.2.	World Wide Web is synonymous with Internet.
2.3.	Packet switching is a network communications method that does not groups all
	Transmitted data, irrespective of content, type, or structure into suitably-sized blocks,
	called packets
2.4.	The ARPANET computer network made a large contribution to the development of
	the e-mail.

2.5. SMTP is the push protocol that can not pull information from a remote server on demand.
2.6. Disaster recovery is the recovery of documents   in case of destruction from fires, floods earthquake etc.
2.7. Streams can not controlled the flow of data from one source to another
2.8. The TCP/IP is slower then NetBEUI
2.9. A user level access is less secure then share level access
2.10. The ability of the new object to implement the base functionality of the parent object in new way is called inheritance

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

X	Y
3.1 server would constantly send new data to the client through the initial connection, that remains open	a) Spoofing
3.2 A kind of forgery, mail assume to be send from know person but actually they are not	b) SGML
3.3 It is an application-layer Internet standard protocol used by local e-mail clients to retrieve e-mail from a remote server over a TCP/IP connection	c) Drug trafficking
3.4 It is an ISO Standard metalanguage in which one can define markup languages for documents ..	d) Web server push
3.5 The ability of a system or product to work with other system or product without much efforts	e) Web designing
3.6 Encoding data to make them unintelligible to unauthorized persons	f) Thread
3.7 use of Internet to sell their illegal substances through encrypted e-mail and other Internet Technology	g) Interoperability
3.8 Skill of designing hypertext presentation of Content delivered to end user	h) Class Diagram
3.9 It can be divided into linear and non linear technique categories	i) Scope
3.10 A single path of execution that is a sub process of the main process	j) POP3
	k) Encryption
	l) Multimedia
	m) nesting

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

(a) Cache	(b) URL	(c) Cyberterrorism	(d) metadata, integration
(e) IMAP4	(f) enterprise data modeling outer jain	(gHeader,Body	(h) CASCADE
(i) Interleaved main memory	(j) Virtual memory	(k) bus	(l) website

(m) Applet			

4.1.   Viewing a Web page on the World Wide Web normally begins by typing the _____ of the page into a Web browser.

4.2.   Web page data may need not to be re-obtained from the source Web server. Almost all Web browsers _____ the recently obtained data on the local hard disk

4.3.   The internet e-mail message consist of two major section that are _____ and _____

4.4.   _____ is one of the two most prevalent protocol for e-mail retrieval.

4.5.   _____ is act of terrorism committed through the use of cyberspace or computer

4.6.   _____ and _____. are the part of the document management

4.7.   _____ collection of information about a particular topic or subject

4.8.   A class that has no direct instances, but whose descendants may have direct instances is called a _____ _____.

4.9.   Java communicate with the web page through a special tag called _____.

4.10.   In _____ topology all device connect to a common shared cable.

PART TWO
(Answer any FOUR questions)

5.
  a. What was the various firewall technique. (6)
  b. What is interoperability and how product or system achieve interoperability?
  c. Explain the advantages of Peer to Peer (P2P) network?

(6+5+4)

6.
  a. What is the difference between SLIP and PPP ?
  b. Explain the difference between router, repeater and bridge
  c. Explain FDDI.

(6+5+4)

7.
  a. What are the various network topologies explain with example.
  b. What is Net etiquette?

(10+5)

8.
  a. What do you understand with e-commerce explain with example (8)
  b. Define document management

(8+7)

9.
  a. Explain Web template system
  b. What is world wide web ? what is the contribution of java to the world wide web.
  c. What is token? List the various type of tokens supported by the java.

(4+6+5)

M2-R4 : INTERNET TECHNOLOGY AND WEB DESIGN

Assignment 1.

Internet Surfing

- a) Open the website of Yahoo! with the help of Internet Explorer or Netscape Browser
- b) Check the properties of your browser.
- c) Change the Home Page of your browser.
- d) Check the History and clear the history.
- e) Create a Bookmark.

Assignment 2.

Email

- a) Create your email account on any of the familiar email services like hotmail, yahoo, rediffmail etc.
- b) Compose and send an email to a friend.
- c) Get the email addresses of five of your classmates. Add them to the address book of your email program. Send them each an email.
- d) Receive an email from a friend.
- e) Attach a document to the email.
- f) Retrieve an attachment from an email received.

Assignment 3.

Search Engines

- a) Open the search engines google and search for 'Doeacc'
- b) Check the Advanced Search Options of Google.
- c) Open the search engines Yahoo and search for 'Indian Railway'

Assignment 4.

Web Chart and Usenet

- a) Start Netscape and select Communicator, Messenger from the menu. Try various ways of driving Usenet News via Netscape Messenger. Look at some serious news group and set-up chat session.
- b) Open Windows Messenger and create a chat session with your friend

Assignment 5.

Web Page Development -HTML

Create a basic web page using Netscape Composer. The topic of the web page is up to you (within acceptable use).

- Create a web page containing information about you, your family and friends.

Enter a suitable title for your page. Add some sub-titles for different sections of your text. For example, you could have a subheading for where you live, your family, your interests etc.

- Format the text of your web page in different Font, Alignment styles. Move the cursor to a sub-title and set it to Heading2.

  Experiment with the different heading styles to see what each one does .Which of these styles do you think is useful? Which are less useful? Why?
  Experiment with the font size, color, style (bold, italic, underline, etc.) and alignment (left, center, right or indented.

- See the HTML that is generated by Browser by selecting View Page source.

- Add a picture to your web page. You have scanned in, or one taken with a digital camera. Alternatively, you can use a picture from another web page. Remember that if you put pictures that you did not take on your web page, you must check for copyright permission first.

- Experiment with different sizes of picture and different locations within your web page. Also, experiment with different alignment and text wrappings. One minor problem with Netscape Composer is that it does not give proper WYSIWYG for pictures with text wrap. You will have to save your page and view it in the browser to see exactly what the layout will be.

- Your HTML documents should have the following characteristics: -

    a) Use of paragraphs.
    b) Use of 1 or more levels of section headers.
    c) Use of highlighting (bold, italics, etc.)
    d) Use of lists.
    e) Use of internal links (to other parts of your document) commonly used for a document table of contents.
    f) Use of links to graphic images and alternate text, in case the image could not be found or is not loaded (alternatively).

By using the above items one should be able to create his/her own home page.

Assignment 6.

Create a document with two links to an external document. The first link should lead to the beginning of the external document. The second link should lead to a particular section in the external document.

In the external document specify a link that will lead to a particular section within it.

Text Content:

Welcome to our homepage
This page has links to the website of ABC Lever Inc.

For further information click on any of the following:

- <u>About ABC Lever Inc.</u>
- <u>Contact Information</u>

Content of Linked pages is

Contact us

ABC Lever Inc. is a conglomerate that has interests ranging from bodycare products to toilet soaps.
A couple of years ago we entered the frozen
Food industry through mergers and
Acquisitions.
Last year we started our plant to manufacture salt and this year it is wheat flour.
Our current turnover is about Rs. 7500 cr and by the next decade we are looking at a target of 15000 cr.

Contact Us

You can contact us at the following address:-

ABC Lever Inc.
101 Maker Chambers III,
Nariman Point,
Mumbai-21
Tel. 2102011

You can also email us at
<u>customersservices@abclever.com</u>

Assignment 7.

Prepare a "resume.html" that might include such information as:
- a) distinguishing marks
- b) special interests
- c) work history
- d) education and training
- e) job objective
- f) relevant skills and experience

Assignment 8.

Create the following HTML page
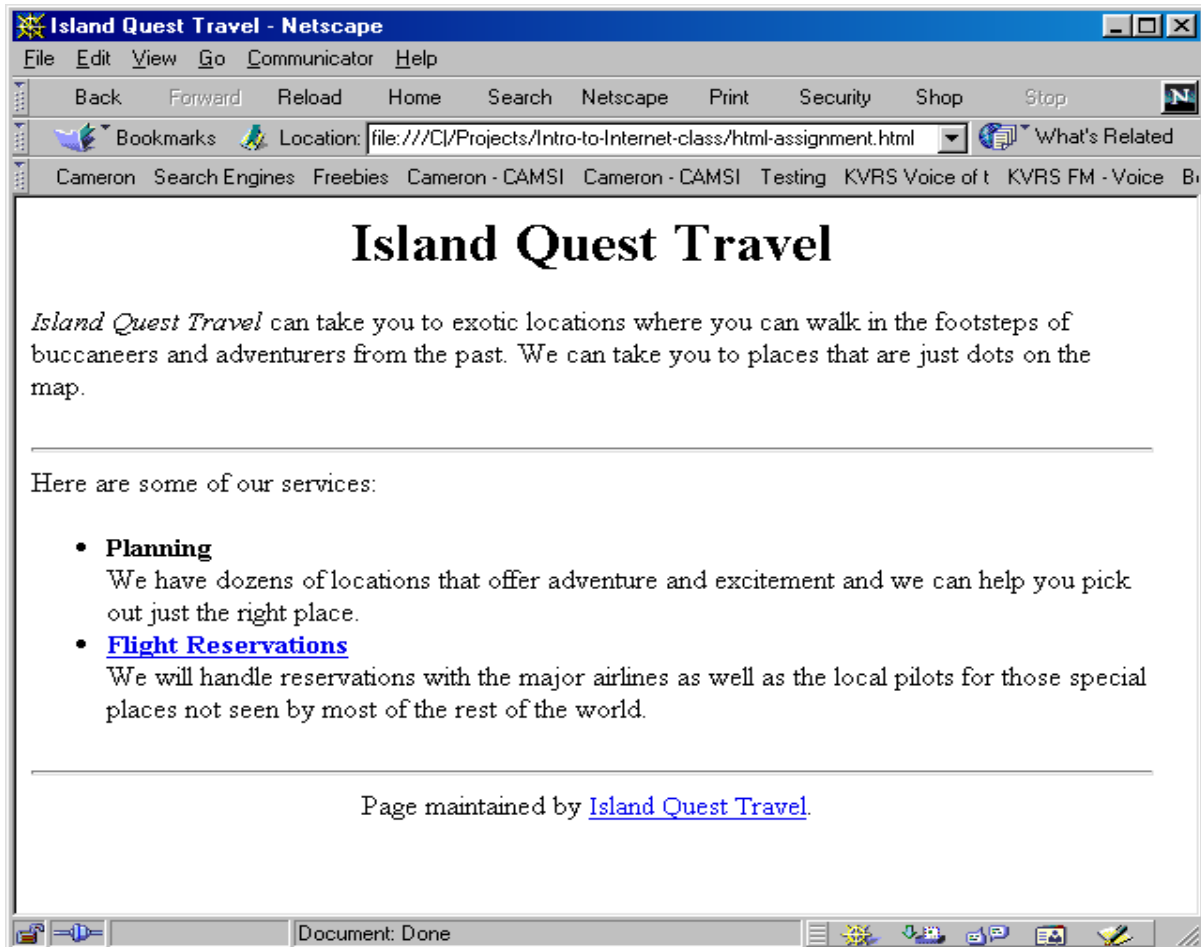
The keywords for the page are travel, recreation, and flight reservations.
The description for the page is
Island Quest Travel can help you make reservations for an exotic island vacation.
The words "Flight Reservations" links to a file called reservations.html.
The words "Island Quest Travel" are an email link to quest@travel.com

Assignment 9.

Design the form using HTML tags.

Employment Exchange

First Name   :
Second Name   :
Father's Name :
Date of Birth :

Sex Code   : ☐   M ☐   F

Qualification : [High School ▼]

Stream   [Science ▼]

Percentage Marks : [   ]

Nationality   : [   ]

Religion   : [   ]

Category   : [SC ▼]

Mailing Address   : [   ]

[   ]

Permanent Address : [   ]

[   ]

[OK]   [CLEA*R*]

Assignment 10.

Design the following web page using HTML Tags:
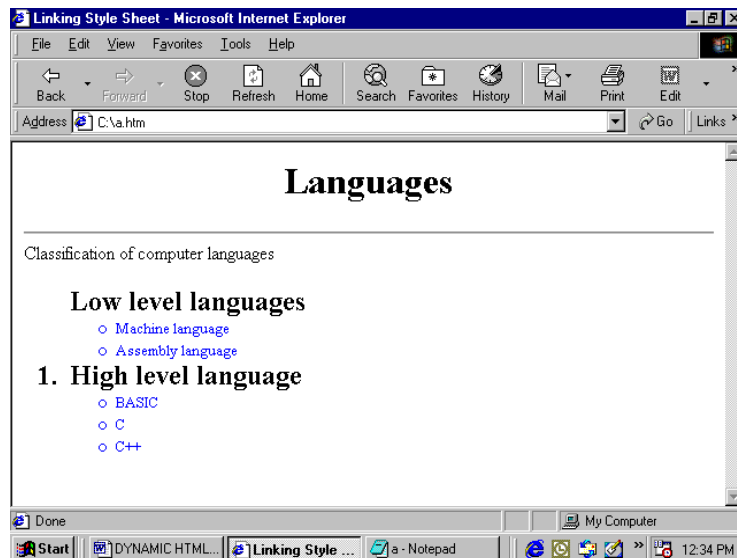
Assignment 11.
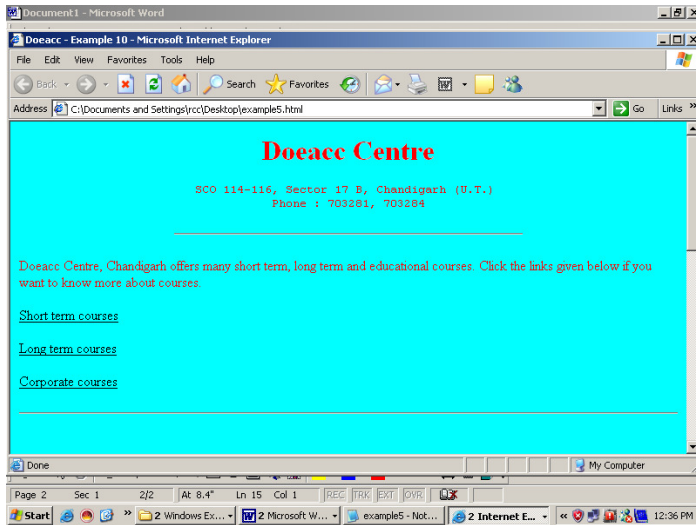
Design the above webpage in which the links for courses should be in the same page with the following details:

Short term Courses.
Doeacc Center offers following short-term courses

       a) Use of Personal Computer
       b) 'C' Language
       c) 'C++" Language
       d) Visual Basic
       e) Oracle/Dev. 2000
       f) AutoCAD
       g) Internet and Web Designing

Long term courses

Doeacc Center offers following long-term courses
       a) O' Level
       b) A' Level
       c) B' Level
       d) C' Level

Corporate courses

Doeacc Center offers following corporate courses
       a) Use of Personal Computer
       b) Courses according to their requirement

Assignment 12.

       a) Make a table with your friend's details in it.
       b) Column One, your friends names
       c) Column Two, Address of your friends
       d) Column Three, Mobile No of your friends

e) Column Four, Birth-Date of your friends

Assignment 13.

    a) Create a 4x3 table
    b) Within each table, place 12 images of Indian Tourist Spots, in each box
    c) Each image link to the corresponding site of Tourist Spot
    d) Each Image must be at least 100x100 in size

Assignment 14.

- Create a page with two frames
- The left frame of page contains the list of names & Images of the Indian National Hero's..
- On the left frame when you click on name or image, the details will be shown on the right frame.

Assignment 15.

create a job application form
- Create an area called section one and place text boxes that receives details -
    a) Name
    b) Age
    c) Gender
    d) High School
    e) Qualifications

- Create an area called section two and place text boxes that receives details -
    a) Previous Employment
    b) References
    c) Qualification

- At the end place a submit button

Assignment 16.

    a) Take the picture of the motherboard
    b) Place an image map on each item that is pointed out on the picture
    c) Have them link to some information that you know about them.
    d) There should be some sort of navigation or a back button on each page

Web Page Development – DHTML

Assignment 17.

Create a style in the <head> section
    a) Change the lists size to h4
    b) Change the links size to h2
    c) Both should also have different colors

Assignment– 18.

Create a style in the <head> section
- a) Create a list of each persons first name in the class
- b) Have each name have a different color and or size
- c) your name must be the biggest

Web Page Development - VbScript

Assignment 19.

Write VbScript code for displaying an alert dialog box with OK button, welcoming a user with a message "Welcome To my Web Site". As soon as the OK button is clicked, an image is displayed in the web browser.

Assignment 20.

Create a VbScript file that contains
- a) a textbox to accept a string and a button.
- b) When user clicks the button the script checks whether that string is palindrome or not

Web Page Development – JavaScript

Assignment 21.

Validate the form in assignment -9 . The following validation checks are required:

- a) First name, second name should not be left empty
- b) Percentage marks should be numeric
- c) Mailing address must contain @ symbol in it.

Assignment 22.

Create a an HTML document containing JavaScript code that

- a) Has a button called check out
- b) when this button is clicked on , it summons two windows
- c) Window 1: Have a question that tells user to input value of the item
- d) Window 2: Have a question that requests the user to input the amount of sales tax

Have a sentence that displays the cost of the item, the sales tax, and your final price.

Assignment 23.

Create a document that reads and stores cookies containing a user name and number of times , he or she has visited your website . Whenever the user visits the site, the system displays the cookies in alert dialogue box, increments the counter cookie by 1 and then resets the counter's expiration date to one year from the current date.

Assignment 24.

Create an HTML document that calculates the square feet of carpet required to carpet a room . Include three text boxes ; Create one text box for width of room and another for length of the room in linear feet . Also create a text box for the cost per square feet of carpeting. When you calculate the cost, add 25% to the total number of square feet to account for the closets and other features of the room. Display the total cost *in an alert dialogue box.*

Assignment 25.

Create a an HTML document with JavaScript code that

a) Has three textboxes and a button
b) The details to be accepted using textboxes are principal, rate of interest, and duration in years.
c) When user clicks the Ok button a message box appears showing the simple interest of principal amount

M3-R4: PROGRAMMING AND PROBLEM SOLVING THROUGH 'C' LANGUAGE

Objective of the Course

The objectives of this course are to make the student understand programming language, programming, concepts of Loops, reading a set of Data, stepwise refinement, Functions, Control structure, Arrays. After completion of this course the student is expected to analyze the real life problem and write a program in 'C' language to solve the problem. The main emphasis of the course will be on problem solving aspect i.e. developing proper algorithms.

After completion of the course the student will be able to
- Develop efficient algorithms for solving a problem.
- Use the various constructs of a programming language viz. conditional, iteration and recursion.
- Implement the algorithms in "C" language.
- Use simple data structures like arrays, stacks and linked list in solving problems.
- Handling File in "C".

Outline of Course

S. No.	Topic	Minimum number of hours
1.	Introduction to Programming	04
2.	Algorithms for Problem Solving	10
3.	Introduction to 'C' Language	04
4.	Conditional Statements and Loops	07
5.	Arrays	06
6.	Functions	06
7.	Storage Classes	03
8.	Structures and Unions	06
9.	Pointers	06
10.	Self Referential Structures and Linked Lists	04
11.	File Processing	04

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

Detailed Syllabus

1. Introduction to Programming   **04 Hrs.**
The Basic Model of Computation, Algorithms, Flow-charts, Programming Languages, Compilation, Linking and Loading, Testing and Debugging, Documentation

2. Algorithms for Problem Solving   **10 Hrs.**
Exchanging values of two variables, summation of a set of numbers, Decimal Base to Binary Base conversion, Reversing digits of an integer, GCD (Greatest Common Division) of

two numbers, Test whether a number is prime, Organize numbers in ascending order, Find square root of a number, factorial computation, Fibonacci sequence, Evaluate 'sin x' as sum of a series, Reverse order of elements of an array, Find largest number in an array, Print elements of upper triangular matrix, multiplication of two matrices, Evaluate a Polynomial

3. Introduction to 'C' Language   04 Hrs.

Character set, Variables and Identifiers, Built-in Data Types, Variable Definition, Arithmetic operators and Expressions, Constants and Literals, Simple assignment statement, Basic input/output statement, Simple 'C' programs.

4. Conditional Statements and Loops   07 Hrs.
Decision making within a program, Conditions, Relational Operators, Logical Connectives, if statement, if-else statement, Loops: while loop, do while, for loop, Nested loops, Infinite loops, Switch statement, structured Programming .

5. Arrays   06 Hrs.
One dimensional arrays: Array manipulation; Searching, Insertion, Deletion of an element from an array; Finding the largest/smallest element in an array; Two dimensional arrays, Addition/Multiplication of two matrices, Transpose of a square matrix; Null terminated strings as array of characters, Standard library string functions

6. Functions   06 Hrs.
Top-down approach of problem solving, Modular programming and functions, Standard Library of C functions, Prototype of a function: Formal parameter list, Return Type, Function call, Block structure, Passing arguments to a Function: call by reference, call by value, Recursive Functions, arrays as function arguments.

7. Storage Classes   03 Hrs.
Scope and extent, Storage Classes in a single source file: auto, extern and static, register, Storage Classes in a multiple source files: extern and static

8. Structures and Unions   06 Hrs.
Structure variables, initialization, structure assignment, nested structure, structures and functions, structures and arrays: arrays of structures, structures containing arrays, unions

9. Pointers   06 Hrs.
Address operators, pointer type declaration, pointer assignment, pointer initialization, pointer arithmetic, functions and pointers, Arrays and Pointers, pointer arrays, pointers and structures, dynamic memory allocation.

10. Self Referential Structures and Linked Lists   04 Hrs.
Creation of a singly connected linked list, Traversing a linked list, Insertion into a linked list, Deletion from a linked list

11. File Processing   04 Hrs.
Concept of Files, File opening in various modes and closing of a file, Reading from a file, Writing onto a file

RECOMMENDED BOOKS

MAIN READING

1. Byron S Gottfried "Programming with C" Second edition, Tata McGrawhill, 2007 (Paper back)
2. R.G. Dromey, "How to solve it by Computer", Pearson Education, 2008.
3. Kanetkar Y, "Let us C", BPB Publications, 2007.
4. Hanly J R & Koffman E.B, "Problem Solving and Programm design in C", Pearson Education, 2009.

SUPPLEMENTARY READING

1. E. Balagurusamy, "Programming with ANSI-C", Fourth Edition,2008, Tata McGraw Hill.
2. Venugopal K. R and Prasad S. R, "Mastering 'C'", Third Edition, 2008, Tata McGraw Hill.
3. B.W. Kernighan & D. M. Ritchie, "The C Programming Language", Second Edition, 2001, Pearson Education
4. ISRD Group, "Programming and Problem Solving Using C", Tata McGraw Hill,2008.
5. Pradip Dey , Manas Ghosh, "Programming in C", Oxford University Press, 2007.

M3-R4: PROGRAMMING AND PROBLEM SOLVING THROUGH 'C' LANGUAGE

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 The programming Language C happens to be

a) An Assembly Level Language.
b) A High Level Language with some Assembly Level Language Features.
c) A Programming Language used only to write System Software.
d) A Programming Language used for developing Application Packages only.

1.2 The C declaration int I_a; implies

a) The variable I_a is a signed Binary Integer .
b) The variable I_a is an Unsigned Decimal Integer.
c) The variable I_a is an signed Hexadecimal Integer.
d) The variable I_a is a signed Integer that can be expressed in any Base.

1.3 The C statement printf ("The Value =%x",62); will print

a) The Value= 62
b) The Value = O62
c) The Value= OX 3C
d) The Value= 3C

1.4 In the following C declaration

float F_C = 12.5;
void VF_A (int);

```
int main();    { /* begin main */
        float F_B;  F_C = 13.5;
    ……
      return (0); }/* end main */
```

a)   The Variable F_C is GLOBAL to both the functions main () as well as VF_A.
b)   The Variable F_C is LOCAL to the function main();
c)   The Variable F_C is LOCAL to the function VF_A.
d)   The Variable F_C is EXTERNAL.

1.5   Consider the following C Program .

define S 10+2

#include <stdio.h>

```
 int main()
                { /* begin main */
                    int  Result  = S + S ;

                  printf ("\n\n Result = %d\n\n", Result ); /* Output Line #2 */

                    return (0);
                } /* end main*/
```

The Output generated by the above C Program will be

a)   Result = 10
b)   Result = 12
c)   Result = 24
d)   Result = 20

1.6   What will be the Output generated by the following C Program ?

```
#include <stdio.h>
 int main()
                { /* begin main */

                  int I_C ; float F_D , F_E;

                  I_C = 5/2 ; F_D = 5/2 ; F_E = 5/2.0;

                  printf ("\n I_C = %d  F_D =%f  F_E = %f \n\n", I_C,F_D,F_E);

                    return (0);

                } /* end main*/
```

a)   I_C= 1 F D = 2.0 F_E = 2.5
b)   I_C= 2 F D = 2.0 F_E = 2.5
c)   I_C= 2 F D = 2.5 F_E = 2.0

d)   I_C= 2 F D = 2.5 F_E = 2.5

1.7   In C Functions the actual expressions / parameters are passed on to Formal
        parameters using the method of :

        a)   Call by reference.
        b)   Call by Value Result.
        c)   Call by Value.
        d)   Call by Name.

1.8   Consider the following C program segment :

        typedef struct Point
                        { float F_x;
        float F_y;
        }Point_T;
        typedef struct Circle
        { float F_Radius;
          Point_T R_Center;
        } Circle_T;
        int main();
        { // begin main
        Point_T R_Point; Circle_T R_Circle;
        /* Circle Manipulation Statements */
        return(0);
        } // end main

        To manipulate a circle which of the following set of assignment statements will have
        to be used ?

        a)   R_Circle.F_Radius = 10.2; R_Circle.R_Center.F_x = 2.0 ; R_Center.F_y=3.0;
        b)   R_Circle.F_Radius = 10; R_Circle..F_x = 2.0 ; R_Circle.F_y=3.0;
        c)   R_Circle.F_Radius = 10.2; R_Circle.R_Center.F_x = 2.0 ;
        d)   R_Circle.R_Center.F_y=3.0;
        e)   R_Circle.F_Radius = 10.2; R_Circle.F_x = 2.0 ; R_Circle.F_y=3.0;

1.9   In the following C Declaration

                #define CUI_Size 10
                  typedef int AI_1D_01_T [CUI_Size];

                int main()
                    {/* begin main */
                        AI_1D_01_T AI_1D_A;
        The variable AI_1D_A represents

        a)   An array of Integers of any size.
        b)   An array of Integers having minimum 10 integers.
        c)   An array of Integers having Maximum 10 Integers.
        d)   None of the above.

1.10   Consider the following C Code

```
#include <stdio.h>
#include <stdlib.h>
int main ()
    {/*begin main */
            int I_X=6; int *PI_Y;
PI_Y = (int*) malloc (sizeof (int));
*PI_Y = I_X;
printf(" *PI_Y =%d",*PI_Y);
*PI_Y = 7;
printf (" I_X = %d",I_X);
return(0);
} // end main
```

Which, among the following will it produce as output ?

a)   *PI_Y = 7 I_X = 6
b)   *PI_Y = 6 I_X = 7
c)   *PI_Y = 7 I_X = 6
d)   *PI_Y = 6 I_X = 6

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

2.1   In C %x format can be used for Inputting signed Octal Integers (FALSE).
2.2   A Pointer variable content will be the Address of the variable it points to. (TRUE).
2.3   In C , a SINGLE scanf () can be used to read in the values of any number of pre-declared variables (TRUE).
2.4   Arrays in C are always stored in Column Major fashion (FALSE).
2.5   ! operator is a BINARY Operator in C. (FALSE).
2.6   Recursive functions provide an elegant way of representing recurrences (TRUE).
2.7   Array represents a homogeneous Data Structure (TRUE).
2.8   A structure cannot be a member of an Union in C (FALSE).
2.9   In C *p++ increments the content of the location pointed to by p (TRUE).
2.10   A C Function can return a whole structure as it's value (TRUE).

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

	X		Y
3.1	Premature exit from within a C Loop	a)	1 Byte.
3.2	Character variable will have a size of	b)	Indentation is essential
3.3	A C Function that do not return a value will be having	c)	Call by Reference.
3.4	A string in C is terminated by	d)	To open a file for writing after discarding it's previous content
3.5	To understand the Blocks of C	e)	An Integer type
3.6	Multiway branching in C can be	f)	A void type

implemented

3.7	All variables declared inside a function	g)	Are Local to that function
3.8	A Pointer Parameter in a C Function simulates	h)	Opening a file in Read mode , retaining the previous content
3.9	A Linked List represents	i)	A white space character.
3.10	In C fopen "w" mode is used	j)	4 Bytes
		k)	A '\0' Charcter
		l)	A dynamic Data Structure
		m)	Using switch – case statement
		n)	Can be achieved by break statement

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

(a) Dividing	(b) One or ZERO	(c) CPU Register	(d) extern
(e) Optional	(f) Randomly	(g) At least once	(h At run time
(i) Linked List	(j) An Array	(k) Fields	

4.1 The Operator I_Value >> 2 is equivalent to _____ I_Value by 4 .

4.2 The Declaration reg int IReg_C will allocate a _____ for the variable IReg_C.

4.3 On executing f = ! (K >10) f will have a value _____

4.4 The individual Elements of any Array can be accessed _____

4.5 The else portion of an if else statement in c is _____

4.6 In C the body of do-while loop will be executed _____

4.7 Any variable starting with _____ in the declaration will be treated as an External variable

4.8 In C a polynomial of the form 100 M 34 – 20M + 10 can be efficiently represented by a _____

4.9 The Components of a Records are termed as _____

4.10 In C any dynamic data structure is created _____ .

PART TWO
(Answer ANY FOUR questions)

5. Consider the following C program Outline that DOES NOT USE any Structured Data Type like ARRAY or STRUCTURE or POINTER whatsoever ANYWHERE :

```
#include <stdio.h>
#include <math.h>


/* NO OTHER LIBRARY CAN BE USED*/


#define CI_Max 9999
```

```
#define CI_Min -9999
/* NO OTHER USER DEFINED CONSTANTS, DATA TYPES OR GLOBALS
CAN BE USED*/
/* User Defined Function Prototypes. NO OTHER FUNCTIONS are used */
void VF_Read_Int ( int, int, int*); /* READS and Returns an Integer through
it's pointer parameter provided it lies between a specific range passed as the
other two parameters . If the value read in within the    happens to be
OUTSIDE this range, it will continue to    loop & print the message    Input
OUT of range ,

 Give   Again  and wait for a proper value to be inputted by the user. */

int IF_Test_Prime (int) ; /* Used to Test MOST EFFICIENTLY whether the
Integer passed as it's only parameter happens to be Prime or Not. It Returns
1 if the passed Integer is prime returns 0 if it is Non Prime. In each case ,
it prints an appropriate message within it */

int main ()
{//begin main int I_Value;
/* You May Employ other Simple Variables */ VF_Read_Int (CI_Max, CI_Min,
&I_Value);
/* Reads in an Integer Value within a Specified Range */
VF_Print_NON_Prime_Factors (I_Value);
/* Displays all the NON Prime Factors of the value I_Value*/
return(0);
}//end main
```

a.   Frame the body of the function

   VF_Read_Int

   . The Function heading is as illustrated below :

   void VF_Read_Int (int I_High, int I_Low, int *PI_X)
   /*   READS and Returns an Integer through it's pointer parameter
   provided it lies between a specific range passed as the other two
   parameters . If the value read in within the   happens to be OUTSIDE
   this range, it will continue to   loop print the message {\bf Input OUT of
   range , Give   Again   and wait for a proper value to be inputted by
   the user. NO OTHER PARAMETER CAN BE USED. */
   b. Frame the body of the function

   IF_Test_Prime
   . The Function heading is as illustrated below :

   int IF_Test_Prime (int I_Num) /* Used to Test MOST EFFICIENTLY
   whether the Integer passed as it's only parameter happens to be prime
   or Not. It Returns 1 if the passed Integer is prime returns 0 if it is
   Non Prime. In each case , it prints an appropriate message within it */

(6+9)

6. Consider two integer data files F1 and F2 having following features.

    a. Number of data values (key) in each file is unknown and the files may be of different sizes.
    b. The values / Integer Keys in both the files F1 & F2 are Sorted in Descending Order.
    c. Same data (key) can appear more than once in F1 or F2.
    d. F1 and F2 may share common data values i.e. same key item may appear both the files .

    Write a C function to merge the two files F1 and F2 to form a third file F3 having the following features.

        -Elements in F3 are sorted in ascending order.
        - Duplicate entries are not permitted (i. e. ,No element appears more than once).

                                                                                    (15)

7. The following operations are defined on a sorted Doubly linked list of Integers L where elements are arranged in Descending order from left.

    INSERT (L,X) : Insert the integer X in the list L if X is not present.

    DELETE (L,X) : Delete the integer X from the list L (if it exists).

    SHOW-MID (L) : Print the n/2 th element of the list from left where n is the Number of elements in the current list and we use integer Division where 5/2 = 2

    Frame C functions to implement each of the above functions INSERT (L,X) , DELETE (L,X) and SHOW_MID(L)

                                                                                    (6+6+3)

8.
    a. In 2 (two) dimensions, a point can be described by its two coordinates namely X & Y both of which can be real numbers. A line can be described in the following manner :

        (i)   The co-ordinates of its two end points (X1, Y1) & (X2, Y2)
        (ii)   Its gradient 'm' & intersection 'c' (in the form Y = mx + c)
        (iii) The length of the line is also stored along with.

        Specify appropriate data types to store a point as well as a line in C.
                                                                                    (1+2)
    b. Write a C function Point_to_Line (P1, P2) that will accept as parameters the coordinates of two points P1 & P2 and return a line that has the aforesaid 2 points as its end points.
                                                                                    (5)

c.   A quadrilateral can be described by a sequence of 4(four) lines such that one end point of one line happens to be the starting point of the next line. Specify a suitable data structure in C to represent a quadrilateral. [2]

(2)

d.   Write a C function that will accept a quadrilateral as a parameter and classify it whether it is a
[2+2+3=7]
A Square.
A Rhombus.
A Rectangle.

in each case it computes the perimeter as well.

(2+2+3)

9.

a.   Write a single Recursive C function to generate the n th Fibonacci number Fib(n) (n being a +ve non zero integer) . You cannot use any array, global variables and/or additional parameters/functions. Trace out the Call & Return sequences along with return values clearly by a schematic diagram when your function Fib(n) is invoked from main() with n = 6. Also mention the TOTAL no. of times any Fib(n) is called for each value of n for invoking Fib(6) from main(), e.g. Fib(2) is called a total of 4 times etc.

(2+5+2)

b.   What will be the value of A(1, 3) if A(m, n) happens to be defined in the following manner? Specify each computation step in detail .

A(0, n) = n + 1 for n ¸ 0
A(m, 0) = A(m − 1, 1) for m > 0
A(m, n) = A(m − 1,A(m, n - 1)) for m, n > 0

(6)

M3-R4: PROGRAMMING AND PROBLEM SOLVING THROUGH 'C' LANGUAGE

Assignment 1.

Write a program to find sum of all prime numbers between 100 and 500.

Assignment 2.

Write a program to obtain sum of the first 10 terms of the following series for any positive integer value of X :

$$X + X^3/3! + X^5/5! ! + X^7/7! + \ldots$$

Assignment 3.

Write a program to reverse the digits of a given number. For example, the number 9876 should be returned as 6789.

Assignment 4.

Write a program to compute the wages of a daily laborer as per the following rules :-

Hours Worked	Rate Applicable
Upto first 8 hrs	Rs 50/-
For next 4 hrs	Rs 10/- per hr extra
For next 4 hrs	Rs 20/- per hr extra
For next 4 hrs	Rs 25/- per hr extra
For rest	Rs 40/- per hr extra

Accept the name of the laborer and no. of hours worked. Calculate and display the wages. The program should run for N number of laborers as specified by the user.

Assignment 5.

Write a program to input 20 arbitrary numbers in one-dimensional array. Calculate Frequency of each number. Print the number and its frequency in a tabular form.

Assignment 6.

Define 2 dimensional array a (3,3), b(3,3),sum(3,3),diff(3,3),mult(3,3). Store 9 arbitrary numbers in a(3,3) and 9 arbitrary numbers in b(3,3). Do the following:

a) Calculate sum of a(3,3) and b(3,3) and store in sum(3,3) where
   sum(i,j)=a(i,j)+b(i,j)
b) Calculate difference of a(3,3) and b(3,3) and store in diff(3,3) where diff(i,j)=a(i,j)-b(i,j)
c) Calculate product of two arrays a(3,3) and b(3,3) and store in mult(3,3) where mult(i,j)= summation of a(i,k)*b(k,j) over k where k=1 to 3.

Print the result in a tabular form

Assignment 7.

Write a function, str_search(char* s1,char* s2, int n) , that takes two strings and an integer, as arguments and returns a pointer to the nth occurrence of 1st string s1 in 2nd string s2, or NULL if it is not present.

Assignment 8.

Write a C function to remove duplicates from an ordered array. For example, if input array contains 10,10,10,30,40,40,50,80,80,100 then output should be 10,30,40,50,80,100.

Assignment 9.

Apply recursive call to do the following:
      (i)   Input 'n'(1-200). Calculate sum of 'n' numbers.
      (ii) Input 'n'(1-20). Calculate product of 'n' numbers.
      (iii) Input 'n'(2-20). Print 'n' number of Fibonacci numbers. In Fibonacci sequence the sum of two successive terms gives the third term. The following are few terms of Fibonacci sequence :-

1   1   2   3   5   8   13   ………

Assignment 10.

Write a program which will arrange the positive and negative numbers in a one-dimensional array in such a way that all positive numbers should come first and then all the negative numbers will come without changing original sequence of the numbers.
   Example:
  Original array contains: 10,-15,1,3,-2,0,-2,-3,2,-9
        Modified array: 10,1,3,0,2,-15,-2,-2,-3,-9

Assignment 11.

Write a menu driven program to maintain a Telephone Directory having following file structure:
      1. Name :   Character type : Length =20 characters.
      2. Address : Character type : Length =40 characters.
      3. Phone: Character type : Length =12 characters.

          Menu
          1. Add record(s)
          2. Display record(s)
          3. Search record(s)
          4. Modify record(s)
          5. Delete record(s)
          6. Backup copy of File
          7. Exit
Type your choice= 1,2,3,4,5,6,7— ->

Assignment 12.

Write a program to extract words form any text file and store in another file. Sort the words in alphabetical order and store them in the same file. Read the sorted file and print the frequency of each word.

Assignment 13.

Write a program to remove all occurrences of word "the" and "The" from an input string. For example

　　　Input : The Dhillon Theatre is now the Fun Republic.
　　　Output : Dhillon atre is now Fun Republic.

Assignment 14.

Write a program to display the Following pattern called Floyed's Triangle.

```
1
2    3
4    5    6
7    8    9    10
11   12   13   14   15
```

Assignment 15.

Write a program that accepts an input integer 'n' in the range 3-9 inclusive, and display the following pattern on a cleared screen.

```
Sample input for n=3                    Sample input for n=4
 Sample output                           Sample output
      3                                        4
     3 2 3                                     4 3 4
    3 2 1 2 3                                  4 3 2 3 4
     3 2 3                                    4 3 2 1 2 3 4
      3                                        4 3 2 3 4
                                                4 3 4
                                                 4
```

Assignment 16.

Write a program to count the vowels in free text given as standard input. Read text one character at a time until you encounter end-of-data. Then print out the number of occurrences of each of these vowels.

Assignment 17.

Write a program to copy one file to another such that every word is reversed before being written to the target file. Assume the maximum size of each word is 10 characters and each word is separated either by new line(s), tab(s) or space(s). For example, if source file contains "I am an Indian", the target file should contain "I ma na naidnI".

Assignment 18.

Define a structure for an Employee having EmployeeName, EmployeeCode, BasicPay, DearnessAllowance, HRA, PF, GrossPay, NetPay Take an array of 10 Employees. Write 'C' functions to :-

    a) Accept data for EmployeeName, EmployeeCode, BasicPay for all the employees.
    b) Compute :-
        a. DearnessAllowance = 50% of BasicPay
        b. HRA = 20% of BasicPay + DearnessAllowance
        c. PF = 12% of BasicPay + DearnessAllowance
        d. GrossPay = BasicPay + DearnessAllowance + HRA
        e. NetPay = GrossPay – PF
    c) Display the name of employee who has highest GrossPay.
    d) Compute and display average net pay.
    e) Display list of all employees in the alphabetical order of employee name.

Assignment 19.

Write a program to convert a given decimal number to its binary equivalent and vice versa.

Assignment 20.

Input any positive integer number (n<=9999999). Convert the number into words.

Assignment 21.

    a) Define a structure of a node of a linked list having an integer data member x.
    b) Use the above structure in (a) and write the functions for the following parts;

    i)   a function which takes a pointer to the head of linked list, which is in ascending order and an integer, x to be inserted in the linked list, as arguments. The node must be inserted in such a way that the linked list remains in ascending order after insertion.

    ii)   a function which takes a pointer to the head of a linked list and an integer, x to be removed from the linked list, as arguments. If x is not found in the linked list, then it should display an appropriate message.

Assignment 22.

Write a program to replace 'a' with 'b', 'b' with 'c',….,'z' with 'a' and similarly for 'A' with 'B','B' with 'C', …., 'Z' with 'A' in a file. The other characters should remain unchanged.

Assignment 23.

Write a function char* stuff(char* s1,char* s2,int sp, int rp) to stuff string s2 in string s1 at position sp, replacing rp number of characters (rp may be zero).

Assignment 24.

Write a program to display the content of a Text file which means it will behave like TYPE command of MSDOS. Suppose the name of your program file: FILETYPE.C and FILETYPE.EXE and the name of the source file is MYFILE.TXT. The following command should work: C: \PROGRAM> FILETYPE   MYFILE.TXT

Assignment 25.

Write a program to input name, address and telephone number of 'n' persons (n<=20). Sort according to the name as a primary key and address as the secondary key. Print the sorted telephone directory.

Objective of the Course

The objective of the course is to introduce .NET technology which provides multilanguage environment to develop windows based software development. The focus is on
- .NET Framework
- Programming Language C#
- Visual Basic
- ASP .NET (for web application)

Outline of Course

S. No.	Topic	Minimum number of hours
1.	The .NET framework	3
2.	C# Basics	11
3.	C# Using Libraries	7
4.	Advanced Features Using C#	7
5.	ASP.NET 2.0	7
6.	Introduction to Programming with Visual Basic.NET	7
7.	File and Database Applications	8
8.	Advanced Programming Constructs	5
9.	.NET Architecture and Advanced Tools	5

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

Detailed Syllabus

1.The .NET framework   **03 Hrs.**
Introduction, Common Language Runtime, Common Type System, Common Language Specification, The Base Class Library, The .NET class library Intermediate language, Just-in-Time compilation, garbage collection, Application installation & Assemblies, Web Services, Unified classes.

2. C# Basics   **11 Hrs.**
Introduction, Data Types, Identifiers, variables & constants, C# statements, Object Oriented Concept, Object and Classes, Arrays and Strings, System Collections, Delegates and Events, Indexes Attributes, versioning.

3. C# Using Libraries   **07 Hrs.**
Namespace-System, Input Output, Multi-Threading, Networking and Sockets, Data Handling, Windows Forms, C# in Web application, Error Handling.

4. Advanced Features Using C#   **07 Hrs.**

Web Services, Windows services, messaging, Reflection, COM and C#, localization. Distributed Application in C#, XML and C#, Unsafe Mode, Graphical Device Interface with C#, Case Study (Messenger Application).

5. ASP.NET 2.0   **07 Hrs.**
Features of ASP.NET 2.0, Stages in Web Forms Processing, Introduction to Server Controls, HTML Controls, Validation Controls, User control, Data Binding Controls, Configuration, Personalization, Session State, ADO.NET

VB.NET programming language

6. Introduction to Programming with Visual Basic.NET   **07 Hrs.**
- Basic Concepts and a Simple Application
- Using Variables, Constants, Functions
- Processing Decisions
- Looping Structures and Lists

7. File and Database Applications   **08 Hrs.**
- File Access, Dialog Boxes, Error Handling, Menus
- Connecting to Databases

8. Advanced Programming Constructs   **05 Hrs.**
- Sub Procedures, Function Procedures, Modules
- Arrays, Structures, Collections

9. .NET Architecture and Advanced Tools   **05 Hrs.**
- Object-oriented Programming
- Creating Distributed Web Applications
- XML and ADO.NET
- Graphics, Printing, Reporting

RECOMMENDED BOOKS

MAIN READING

1. Joe Mayo, "C# 3.0 Unleashed: With the .NET Framework 3.5", Pearson Education, 2009.
2. Schildt H, "C#: The Complete Reference", Tata McGrawHill, 2007.
3. Powell R & Weeks R, "C# and The .NET Framework", BPB Publications, 2007.
4. Chappell D, "Understanding .NET", Pearson Education, 2007.

SUPPLEMENTARY READING

1. Balagurusamy E, "Programming with C#", Tata McGrawHill, 2008.
2. Abolrous S A, "Learn C# Includes the C# 3.0 Features", BPB Publications, 2008.
3. Kanetkar Y and Dani Asang, "Test Your C# .Net Skills part I & II", BPB Publications, 2008.
4. Mitchell Scott, "Sams Teach Yourself ASP .NET 2.0 in 24 Hours, Complete Starter kit (with CD)", Pearson Education, 2006.
5. Onion Fritz and Keith Brown, "Essential ASP .NET 2.0", Pearson Education, 2007.

M4.1- R4: APPLICATION OF .NET TECHNOLOGY

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   In C# how do you call a member of a base class from within a derive class
a) There is no way
b) With 'MyBase, keyword
c) With 'base' keyword
d) With 'this' keyword

1.2   The output of following
Byte b1=1
Byte b2=255
Byte tot=b1+b2
Console.writeLine(tot);

a) Runtime Error
b) Compilation Error
c) 256
d) One

1.3   Which of the following operation you can perform on an ADO.NET data set.
a) Synchronized with dataset
b) converted to XML
c) Synchronized with recordset
d) schema form a dataset

1.4   What happens when ypu include a Throw statement in the Catch Block
a) Runtime Error
b) Compilation Error

c) Current Exception is re-thrown
d) Execution is abandoned

1.5   Size of session Id
       a) 32 bit long string
       b) 32 bit long integer
       c) 32 bit long double
       d) 32 bit long char

1.6   The Data Base
       a) SQL
       b) .Net
       c) COBOL
       e) SQL Server

1.7   Default authentication mode in ASP. Net
       a) Window
       b) Passport
       c) Form
       d) Cookies

1.8   If browser don't support client – side cookies what state maintenance approach can
       be use
       a) Client Side
       b) Cookie less
       c) Server Side
       d) Non of Above

1.9   Controls that can be added to a page to validate user input
       a) Validation
       b) Login
       c) Web Parts
       d)

1.10   Defines a label for control
       a) <text>
       b) <label>
       c) <legend>
       c) <textarea>

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

2.1.   ASP.Net is a language.
2.2.   C# support enumerated data type
2.3.   32 bits is the big data type in .Net.
2.4.   System.Array can stor multiple data type .
2.5.   Class MyClass : BaseClass is the syntax for inherit in c#
2.6.   Java programming language support SOAP.
2.7.   It is not possible for any class methods in the system namespace to be user
       directly without first creating on object form the class

2.8. XML is case sensitive.

2.9. Label1.text ="Anna Jain" is a valid syntax in VB.Net.

2.10. Word- spacing property user to set the width of the elements.

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

X	Y
3.1 Support multiple inheritance using	a) Systm.web.ui.page
3.2 A technique use to stream dat in c#	b) Common Language run time
3.3 Two dimensional array in c#	c) int[,] MyArray
3.4 Session state mode.	d) wading
3.5 XML documentation comment	e) <h3>
3.6 Web forms inherit.	f) Systm.web.ui.page
3.7 CLR	g) serialization
3.8 Protocol	h) ///
3.9 Heading level 3	i) int [][] MyArry
3.10 Embedded in web pages	j) Oracle server
	k) Interface instead
	L) //
	m) ARP
	n) HTML
	o) Scripts

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

(a) abstract	(b) interface	(c) two	(d) .C#
(e) Zero	(f) .cs	(g) 32	(h) System.int32
(i) common parameter	(j) 19	(k) System.int64	(l) Microsoft.access
(m) delete	(n) &	(o) remove	(p) '\n'
(q) !	(r) 	(s) different parameter	

4.1 A static consturctor can have _____ _____praramter.

4.2 The total no of event in Global.asax file in Asp.Net is ____ ____.

4.3 _____ is the extension of C# programming code.

4.4 _____ ____ is CTS type of int data type in C#.

4.5 Access database connect with data base with ____ ____ provider.

4.6 the function _____ _____ to removes char from the current string in c#

4.7 The tag of HTML _____ ____ to break the line.

4.8 _____ _____ is the bitwise unary operator in c#.

4.9   Overload the method in OOPL using _____ ___.
4.10   The accessibility modifiers are allowed in _____ __ class.

PART TWO
(Answer ANY FOUR questions)

5.

    a. What is the mean by Structure? How is different form Class? Define with example

    b. Can we have private constructor? When can I use them? When should we implement a private constructor?

    c. What's a delegate?

                                                (5+8+2)

6.

    a. What is .Net Remoting? Define the use of channels.

    b. What is caching? Explain the catching option in Asp. Net.

    c. Define Web Services.

                                                (5+7+3)

7.   Write short notes (any three) of the following

    a. Garbage Collection

    b. Cookies

    c. XML

    d. ADO.Net

    e. Dataset

                                                (5+5+5)

8.

    a. Create following function using C#

       i.   To print all prime no between 20 to given no.

       ii.   To find out the HCF of two given no.

    b. What is the meaning of Data Binding?

                                                (6+4+5)

9.

    a. What is the difference between servers.transfer and response. Redirect.

    b. What is the meaning of URL.

    c. What is the meaning of Web Application.

                                                (8+4+3)

Assignment 1

C# Programming
1. Write a program to read two strings from the keyboard using readline statements and compare them ignoring the case.
2. Write a program that takes number of lines and displays the pattern as:-
 Example:- If number of lines are 5 then

```
                1
         1      2      1
1               2      3      2      1
         1      2      1
                1
```

3. Write a program to get a number and check whether it is prime or not.
4. Write a program to determine the real roots of the quadratic equation
$ax^2 + bx + c = 0$ (where $a \ne 0$) after requesting the values of a, b, and c. Note: The equation has 2, 1, or 0 solutions depending on whether the value of b^2 - 4*a*c is positive, zero, or negative. In the first two cases, the solutions are given by the quadratic formula (-b ± Sqrt(b^2 - 4*a*c))/2*a).
 Test the program with the following sets of coefficients:

        a = 1 b = -11 c = 28 Solutions are 4 and 7

        a = 1 b = -6   c = 9   Solution is 3

        a = 1 b = 4   c = 5   No solution

Assignment 2

C# Programming
1.   Write a program to get the name and marks in three subjects for 100 students, print the number of students having A, B, C grade and fail students as per the following rules:- Total marks is sum of marks in three subjects.

Percentage	Grade
>=80	A
>=60 and <80	B
>=40 and <60	C
otherwise	F

2.   Write a program to get a count and display fibonacci series as
     Enter Count: 10
     Output:-
     Series is
     1 1   2   3   5   8   13   21   34   55
3.   Write a program to get two matrices and multiply them. Make sure that number of columns of first matrix = number of rows of second.
4.   Write a program that counts the number of occurrences of a particular character in a line of text.

Assignment 3

Classes, Objects

1. a) Create a base class, Telephone, and derive a class ElectronicPhone from it. In Telephone, create a protected string member phonetype, and a public method Ring( ) that outputs a text message like this: "Ringing the <phonetype>." In ElectronicPhone, the constructor should set the phonetype to "Digital." In the Run( ) method, call Ring( ) on the ElectronicPhone to test the inheritance.

b) Extend Exercise 1 a to illustrate a polymorphic method. Have the derived class override the Ring( ) method to display a different message.

c) Change the Telephone class to abstract, and make Ring( ) an abstract method. Derive two new classes from Telephone: DigitalPhone and TalkingPhone. Each derived class should set the phonetype, and override the Ring( ) method.

2. Create a class date to hold day, month and year . It should have a constructor to define default values, a method to display date in the format dd/mm/yyyy, another method to get the date and increment the date by one day.

3. Imagine you want to write a (console-based) program for a department store. Each item in this catalog is represented by its Stock number, its name or description, and its price. Based on this, create a class that represents each item. Implement it using Array list.

Assignment 4

Operator Overloading, Delegates and Events

1. Using the class date created in previous assignment, overload operator == to check whether two dates are equal or not.

2. Create a class matrix to store integer data. Overload operators +, - and * to implement matrix addition, subtraction and multiplication respectively.

3. Create a class complex to handle complex numbers. Overload operators +,-,* and = for complex numbers. The complex numbers should be displayed as 4+3i.

4. Create a generic sorting application using delegates.

5. Create an application for a bank to manage accounts and raise an event when a transaction causes the balance to fall below some minimum balance. A low balance happens because of a withdrawal of some amount that reduces the account balance below the minimum required balance. The notification should be automatic, so appropriate action can be taken by some other part of the application without user intervention. [Hint: Use custom delegates and events].

Assignment 5

Exception Handling and Multithreading

1. Write a program that throws an exception of type "array index out of bounds" and then handles it appropriately.

2. Write a program that opens two files and copies the contents of one file to another. It should have an exception to handle non existing file in case of reading first file.

3. Write a program to create and start a thread t1. A write method should be defined to display a string in the console window when the thread starts.

Assignment 6

Namespaces, Windows Application

1 Create a namespace Math that has a class Addition and Multiplication containing methods to handle addition and multiplication of integer array. Write a program to call addition and subtraction as

Math.Addition add1=new Math.Additon()
double x=add1.add(1,3,5,6)
The result should be 15.
2   Write a windows application in C# having two textboxes and a button, validate that the textboxes are not blank. Clicking the button will interchange the textbox values and the button disappears.
3   Write a windows application in C# having a textbox and a button. The textbox should get date of birth of the user and it should display the age of the user.

Assignment 7

Advanced Features in C#

1. Create a windows application and draw shapes as given below. Coordinates for rectangle are 0,0,50,50 and ellipse are 0,50,80,60 (0,50 upper left corner of bounding rectangle that defines the ellipse, 80,60 are width and height respectively).
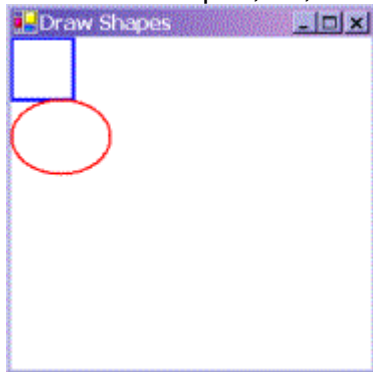
2. Write a program to open an XML file to write or read, and give options: for write-override or append if already exists and in case of read , if the XML file doesn't exist, create new XML file. Use *Xml Text Writer* or *Xml Document.*

Assignment 8

ASP.NET controls

1. Create a web page as:-
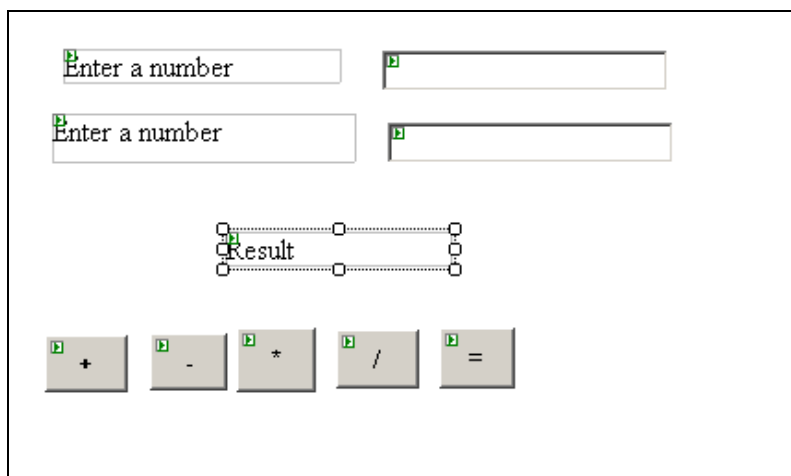
Result should be displayed in the corresponding label.
2.   Create a web page as:-
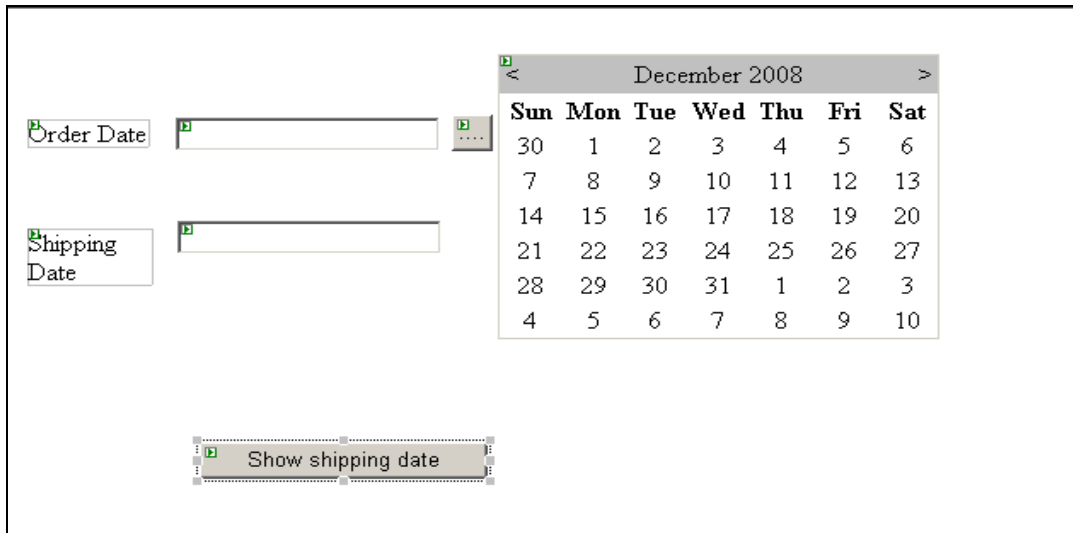
Calendar should be displayed on click of . Shipping Date is calculated as two months ahead of specified order date.

Assignment 9

ASP.NET controls

1. Create a web page as:-
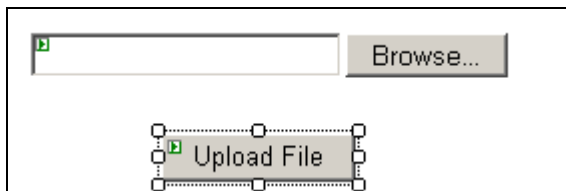
On the click of Upload file , the filename specified in the file upload control should be saved to images folder in the website. It should also check the extension of file specified should be .bmp,.gif,.jpg etc.

2. Create a web page as:-
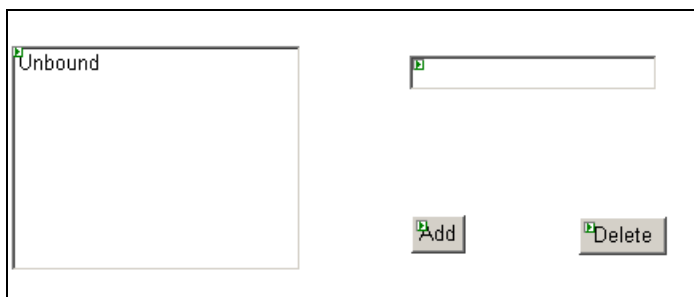
On the click of Add button the text from textbox should be added to listbox and on the click of delete button the item should be removed from the listbox.

Assignment 10

Multiviews, Session State

1. Create a web page as:-
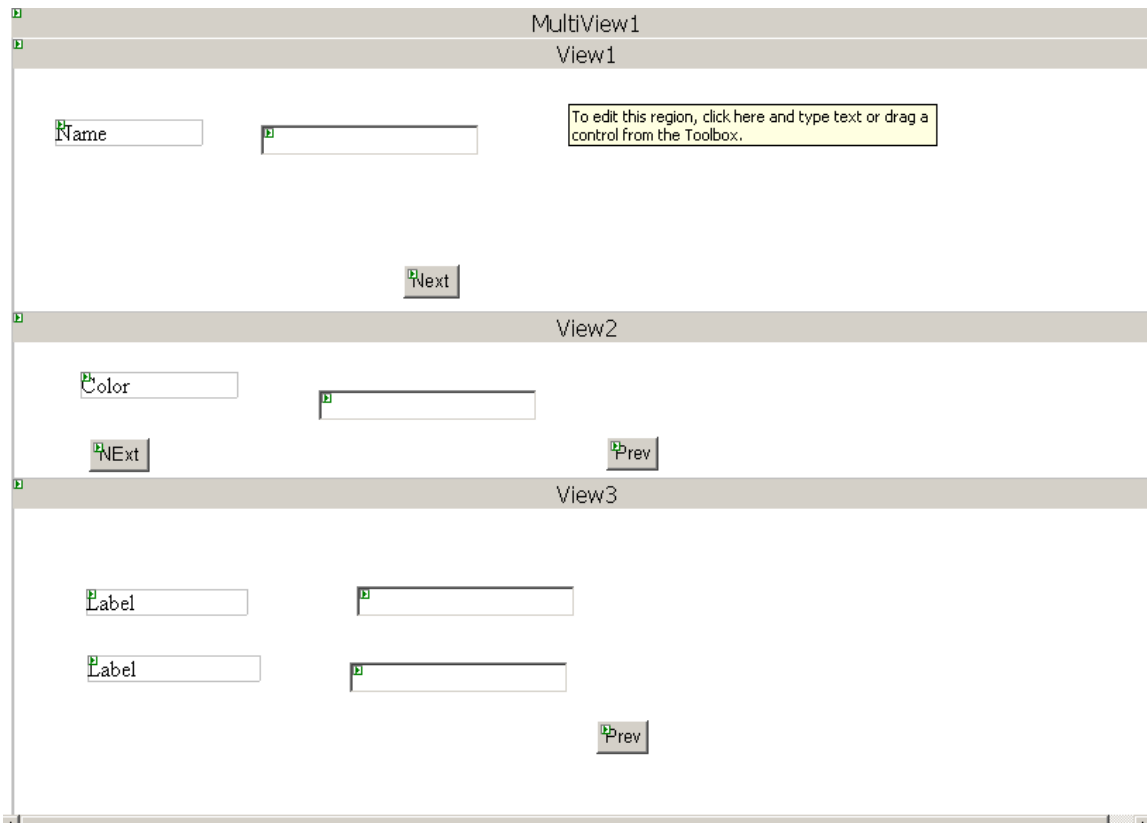
On the click of next button, it should display next view and on the click of previous button, it should display previous view. When we click at next button of view2 it should display value of name and color (from previous views) in view3 .

2. Create a web form as:-

Username and password are both required. On click of remember me next time it should store the password and display it next time the same user tries to login.

Assignment 11

HTML Controls

1. Using HTML table control, generate the following output. It should take number of rows and columns from the user and display the table as shown below.

2. Using Html checkbox control, create a following page:-

What color do you prefer?

☑ Red

☐ Blue

Output:-
You prefer red!
3. Using HTML image control, create a following page:-

Images available should be smiley, angry and stickman. User selects the image and on click of display image, corresponding image should be displayed.

Assignment 12

Validation Controls

Create a web form with given validations:-

Hint Question should have a predefined list of questions as Pet's name, School Name, Your middle name etc.

Assignment 13

Database handling

1. Given table course to store courseno, coursename,fees, duration and timings. Create a datagrid to edit, delete and select a course.
2. Create a table class to store rollno,name, marks1,marks2,total and grade. Then make a web form to do the following:-

While adding a record, total and garde should be automatically displayed as Total marks is sum of marks in two subjects.

Percentage	Grade
>=80	A
>=60 and <80	B
>=40 and <60	C
otherwise	F
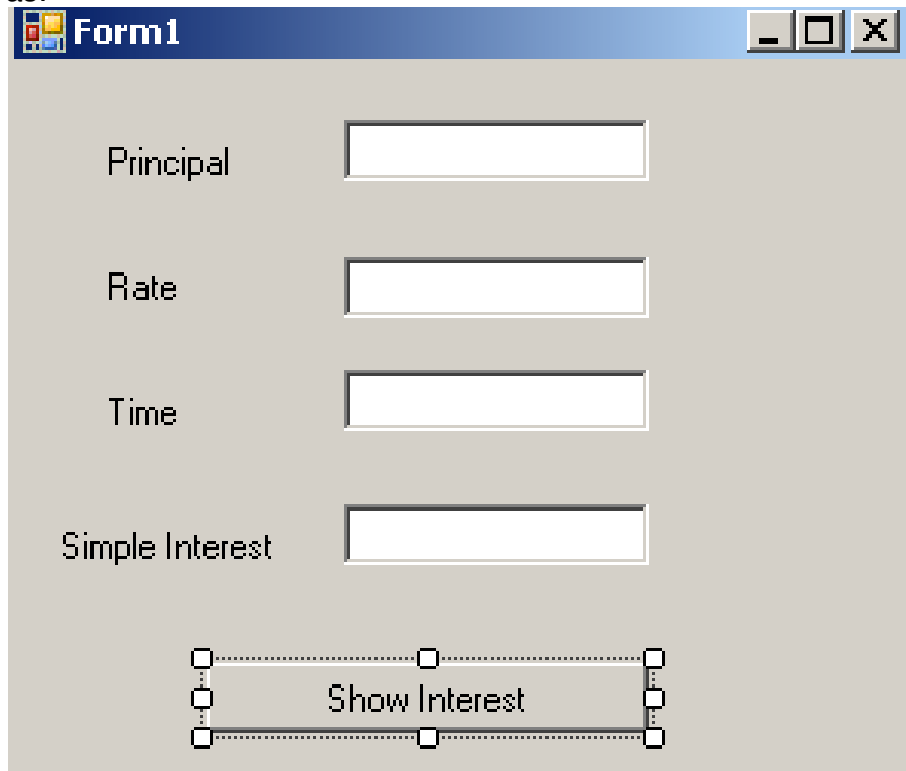
Assignment 14

VB.NET Programming
1. Create a form to calculate area and show area of rectangle as:-

2. Create a form to get principal, rate and time then calculate simple interest and show it as:-

3. Write a program to handle a savings-account withdrawal. The program should request the current balance and the amount of the withdrawal as input and then display the new balance. If the withdrawal is greater than the original balance, the program should display "Withdrawal denied." If the new balance is less than Rs. 150, the message "Balance below Rs. 150" should be displayed.

Assignment 15

VB.NET Programming

1. Write a program that displays a Celsius-to-Fahrenheit conversion table. Entries in the table should range from -40 to 40 degrees Celsius in increments of 5 degrees. Note: The formula f = (9/5)*c + 32 converts Celsius to Fahrenheit.

2. Write a program that accepts a word as input and determines if its letters are in alphabetical order. (Test the program with the words "almost," "imply," and "biopsy.")

Assignment 16

VB.NET Controls

1. Write a program that takes a number and displays whether it is prime or not.

2.Write a program to add items to a listbox using a textbox and from listbox to textbox as:-
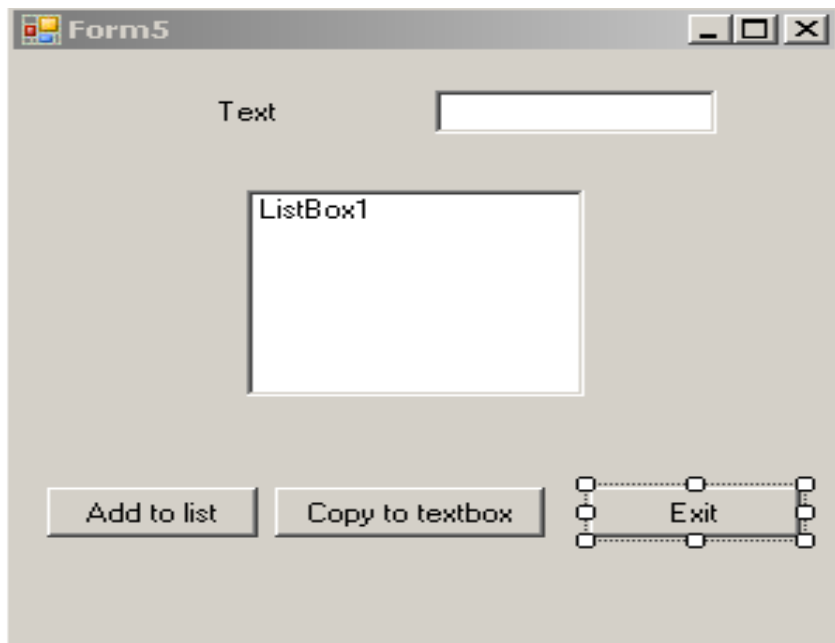
Assignment 17

RadioButtons and Checkboxes
1. Prepare a form as follows:-
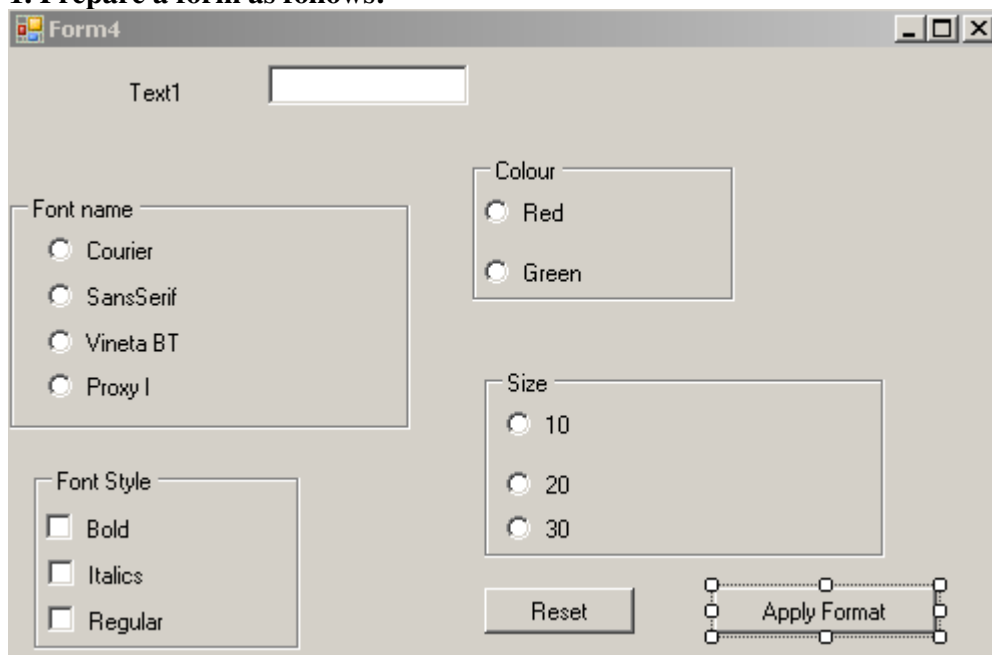
The text present in the textbox should be formatted according to the selection of the user.

2. Create a form as follows:-
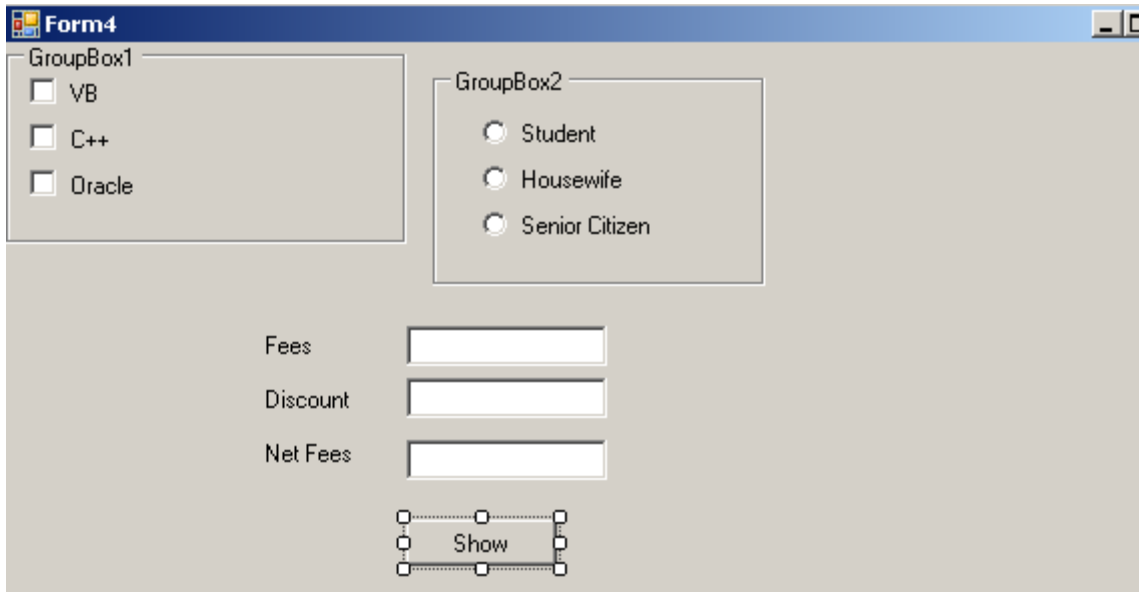
Fee details are as follows:-
VB 5000, C++ 3000, Oracle 6000

Discount:-
Student 15% of fees
Housewife 20% of fees
Senior Citizens 25% of fees.

On the click of show button , it should display fees, discount and net fees in the corresponding text boxes.

Assignment 18

Properties of Controls and Dialog Boxes
1. When one of the two buttons is pressed, the words on the button are displayed in the text box with the stated alignment. On the click of right button text in all textboxes should be aligned right. Note: Rely on IntelliSense to provide you with the proper settings for the Text Align property.
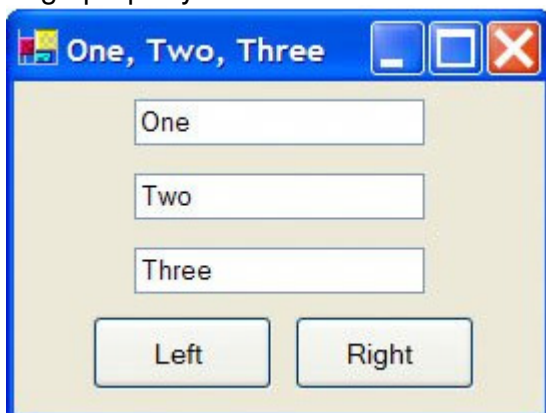
Object	Property	Setting
FrmAlign	Text	One,Two, Three

Object	Property	Setting
TxtBox1-3	ReadOnly	True
BtnLeft	Text	Left
btnRight	Text	Right

2.   Create a form as follows. On click of change color the colour of the text should be changed.
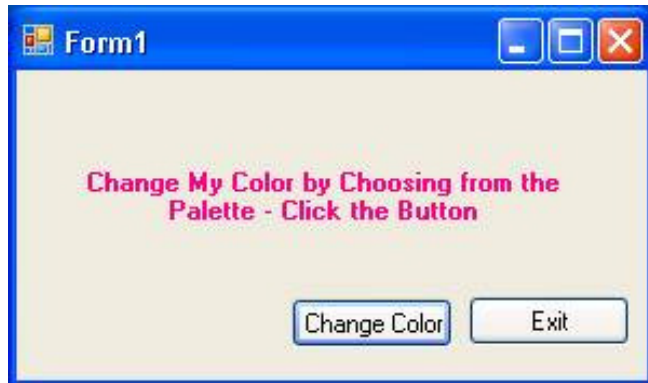
Assignment 19

Menus ,Structures and Collections

1.   Write a program with a single text box and a menu with the single top-level item Edit and the four second-level items Copy, Paste, Cut, and Exit. Copy should place a copy of the selected portion of textbox into the clipboard, Paste should duplicate the contents of the clipboard at the cursor position, Cut should delete a selected portion of the text box and place it in the clipboard, and Exit should terminate the program.

2.   Create a structure distance to store distance in feet and inches. Write a program to get two distances, find their difference and display them.

3. Create a structure person to store firstname, lastname, phone number and email id of a person. Write a program to create an arraylist and store the information of three persons. Also check the records should be unique.

Assignment 20

Procedures

1.Write a program that requests a number as input and displays three times the number. The output should be produced by a call to a Sub procedure named Triple.

2. Write a program that requests a word as input and displays the word followed by the number of letters in the word. The output should be produced by a call to a Sub procedure named HowLong

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3. Write a program that requests a word of at most ten letters and a width from 10 through 20 as input and displays the word right-justified in a zone having the specified width. The output should be produced by a call to a Sub procedure named PlaceNShow.

Assignment 21

Functions and Modules

1. Write a program that requests three numbers as input and displays the average of the three numbers. The output should be produced by a call to a function named Average

2. Request a person's first name and last name as input and display the corresponding initials. (Create module)

3. Request the amount of a restaurant bill as input and display the amount, the tip (10 percent), and the total amount. (Create module)

Assignment 22

Arrays

1. Create a standard calculator using array of buttons:-
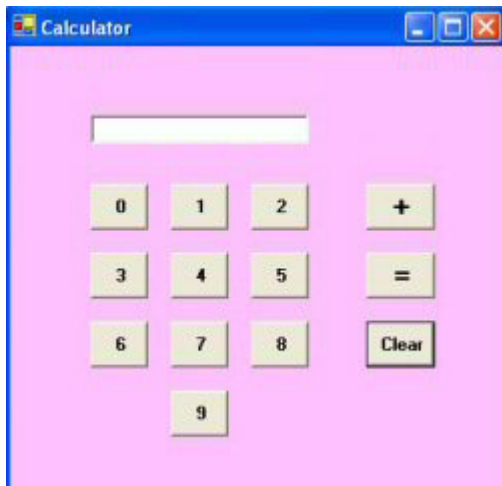
2. Given two arrays of type Double, p() and q(), each with upper bound 20, compute the sum of the products of the corresponding array elements, that is,

$$p(0)*q(0) + p(1)*q(1) + p(2)*q(2) + ... + p(20)*q(20)$$

3. Airline Reservations. Write a reservation system for an airline flight. Assume the airplane has 10 rows with 4 seats in each row. Use a two-dimensional array of strings to maintain a seating chart. In addition, create an array to be used as a waiting list in case the plane is full. The waiting list should be "first come, first served," that is, people who are added early to the list get priority over those added later. Allow the user the following three options:
    a. Add a passenger to the flight or waiting list.
☞   Request the passenger's name.
☞   Display a chart of the seats in the airplane in tabular form.

☞ If seats are available, let the passenger choose a seat. Add the passenger to the seating chart.

☞ If no seats are available, place the passenger on the waiting list.

b. Remove a passenger from the flight.

☞ Request the passenger's name.

☞ Search the seating chart for the passenger's name and delete it.

☞ If the waiting list is empty, update the array so the seat is available.

☞ If the waiting list is not empty, remove the first person from the list, and give him or her the newly vacated seat.

c. Quit.

Assignment 23

Classes and Objects

1. Write a program that calculates an employee's pay for a week based on the hourly wage and the number of hours worked. All computations should be performed by an instance of the class Wages.

2. Write a program in which a college bookstore keeps track of and determines the retail prices of textbooks. All computations should be performed by an instance of the class Textbook. The class should have properties Title, Author, Cost (wholesale cost), Quantity (number of copies in stock), and the method Price, that is, the retail price. In this method the Price should be determined as 1.25 times the Cost.

3. Write a program that calculates the average of up to 50 numbers input by the user and stored in an array. See figure. The program should use a class named Statistics and have an AddNumber method that stores numbers into an array one at a time. The class should have a Count property that keeps track of the number of numbers stored and a method called Average that returns the average of the numbers.
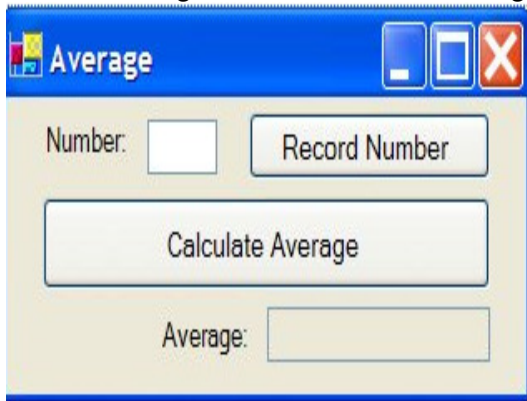
Assignment 24

Graphics and Reporting

1. Create a form as follows
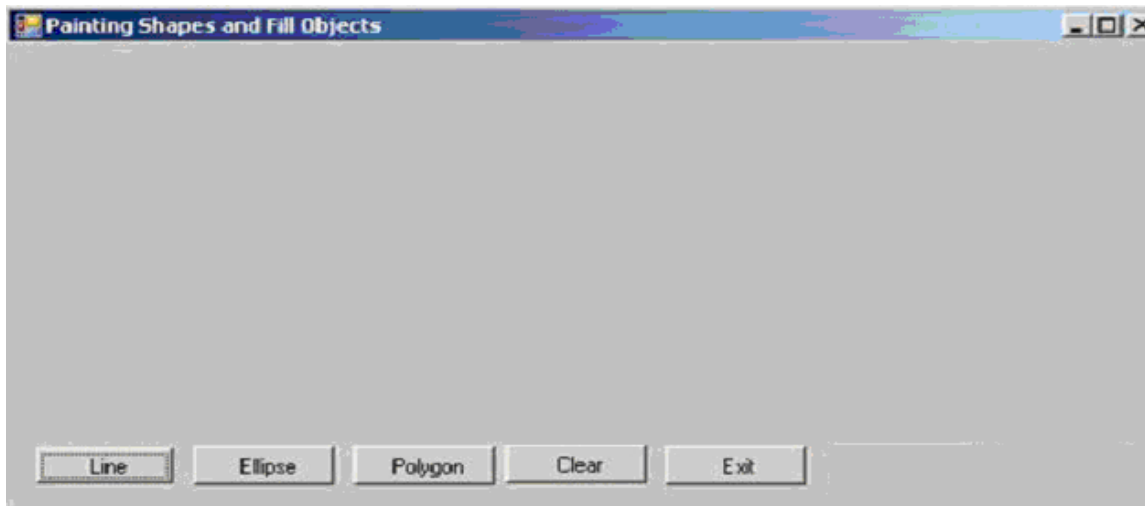
On click of Line, polygon it should draw it after getting starting and ending coordinates. On click of Ellipse it should draw it after getting upper left corner coordinates of bounding rectangle that defines the ellipse, width and height coordinates.

2. Write a program to display a company's payroll report in a list box. The program should read each employee's name, hourly rate, and hours worked from a file and produce a report in the form of the sample run shown in Figure . Employees should be paid time-and-a-half for hours in excess of 40.

Figure. Sample output .			
Payroll Report for week ending 11/17/06			
Employee	Hourly Rate	Hours Worked	Gross Pay
Al Adams	$6.50	38	$247.00
Bob Brown	$5.70	50	$313.50
Carol Coe	$7.00	40	$280.00
Final Total			$840.50

Assignment 25

Crystal Reports

Given tables OrderMaster , OrderDetails , Product .
OrderMaster
OrderMaster_id, OrderMaster_date, OrderMaster_customer, OrderMaster_createduser
OrderDetails
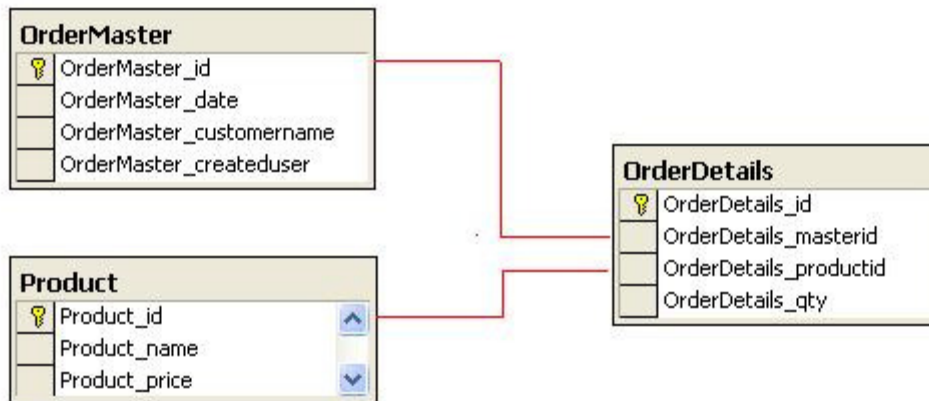OrderDetails_id, OrderDetails_mastered, OrderDetails_productid, OrderDetails_qty
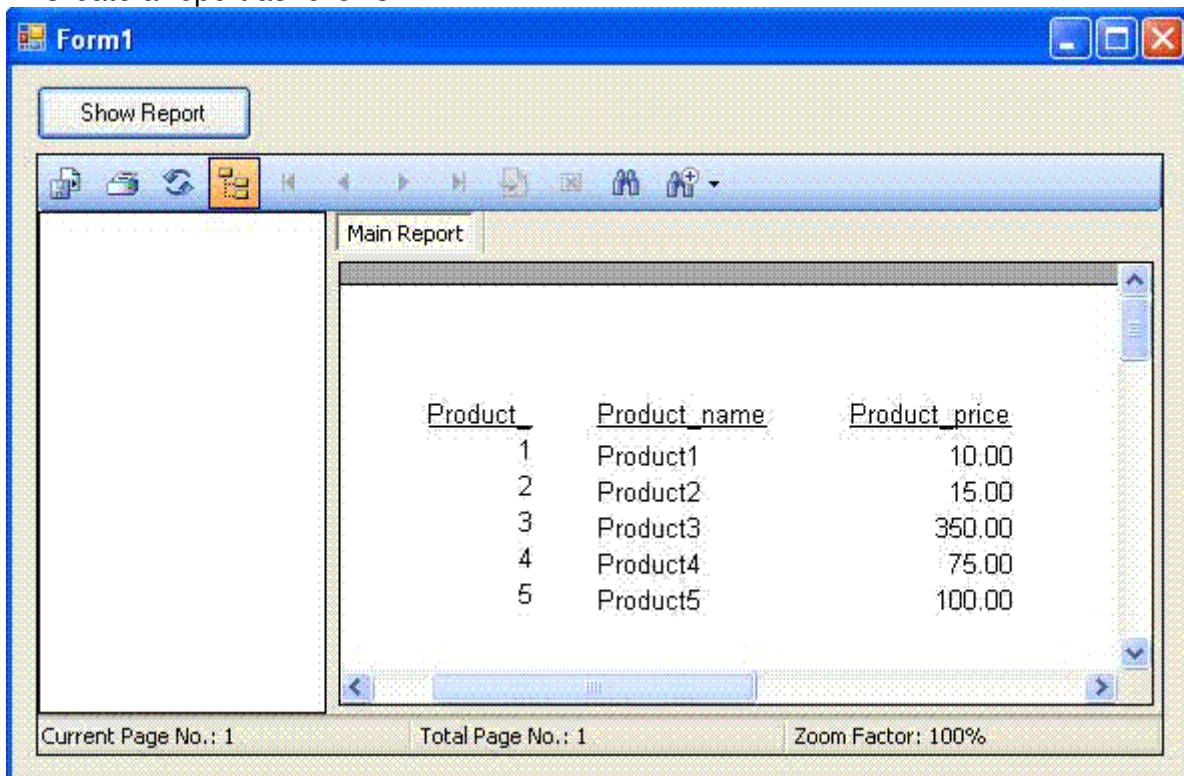Product
Product_id, Product_name, Product_price
The following picture shows the relations of each table :

1. Create a report as follows:-

2. Enter any price and generate a report of the Product list whose price is greater than or equal to the entered price.

Objective of the Course

This course aims to introduce the fundamental elements of multimedia. It will provide an understanding of the fundamental elements in multimedia. The emphasis will be on learning the representations, perceptions and applications of multimedia. Software skills and hands on work on digital media will also be emphasized. On completion of the subject, the students will understand the technologies behind multimedia applications and master the skills for developing multimedia projects. After successfully completing the module student should be able to:
   • Summarize the key concepts in current multimedia technology.
   • Create quality multimedia software titles.

Outline of Course

S. No.	Topic	Minimum number of hours
1.	Introduction to Multimedia	08
2.	Computer Fonts and Hypertext	10
3.	Audio fundamentals and representations	10
4.	Image Fundamentals and representations	10
5.	Video and Animation	10
6.	Multimedia Authoring	12

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

Detailed Syllabus

1. Introduction to Multimedia   **08Hrs.**
What is multimedia, Components of multimedia, Web and Internet multimedia applications, Transition from conventional media to digital media.

2. Computer Fonts and Hypertext   **10 Hrs.**
Usage o f text in Multimedia, Families and faces of fonts, outline fonts, bitmap fonts International character sets and hypertext, Digital fonts techniques.

3. Audio fundamentals and representations   **10 Hrs.**
Digitization of sound, frequency and bandwidth, decibel system, data rate, audio file format, Sound synthesis, MIDI, wavetable, Compression and transmission of audio on Internet, Adding sound to your multimedia project, Audio software and hardware.

4. Image fundamentals and representations   **10 Hrs.**
Colour Science , Colour, Colour Models, Colour palettes, Dithering, 2D Graphics, Image Compression and File Formats :GIF, JPEG, JPEG 2000, PNG, TIFF, EXIF, PS, PDF, Basic Image Processing [Can Use Photoshop], Use of image editing software, White balance correction, Dynamic range correction, Gamma correction, Photo Retouching.

5. Video and Animation 10 Hrs.

Video Basics , How Video Works, Broadcast Video Standards, Analog video, Digital video, Video Recording and Tape formats, Shooting and Editing Video (Use Adobe Premier for editing), Video Compression and File Formats. Video compression based on motion compensation, MPEG-1, MPEG-2, MPEG-4, MPEG-7, MPEG-21, Animation: Cell Animation, Computer Animation, Morphing.

6. Multimedia Authoring 12 Hrs.

Multimedia Authoring Basics, Some Authoring Tools, Macromedia Director & Flash.

Note: The aim of the syllabus is to provide orientation as regard to uses of Multimedia. Practical Assignments may be handled using Multimedia tools, such as Flash, Dreamweaver, Photoshop etc. or any other open source multimedia tools.

RECOMMENDED BOOKS

MAIN READING

1. Tay Vaughan, "Multimedia making it work", Tata McGraw-Hill, 2008.
2. Rajneesh Aggarwal & B. B Tiwari, " Multimedia Systems", Excel Publication, New Delhi, 2007.
3. Li & Drew, " Fundamentals of Multimedia" , Pearson Education, 2009.

SUPPLEMENTARY READING

1. Parekh Ranjan, "Principles of Multimedia", Tata McGraw-Hill, 2007
2. Anirban Mukhopadhyay and Arup Chattopadhyay, "Introduction to Computer Graphics and Multimedia", Second Edition, Vikas Publishing House.

M4.2-R4: INTRODUCTION TO MULTIMEDIA

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　_____ refers to any type of application or presentation that involves more than one type of media, such as text, graphics, video, animation, and sound.
a) An executable file
b) Desktop publishing
c) Multimedia
d) Hypertext

1.2　Which of the following is the advantage of using MIDI over digital audio?
I.　Consistency in audio quality
II.　Compatibility
III.　Processor speed requirements
IV.　File size

a)　I, II, III
b)　I, III, IV
c)　II, III, IV
d)　I, II, III, IV

1.3　Hypertext is
a)　used to link document
b)　a search engine
c)　includes sound and video
d)　requires plug-in to be view by a browser

1.4　_____ is used to compress images.
a)　MPEG

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b) JPEG
c) either a or b
d) none of the above

1.5   _____ audio/video refers to on-demand requests for compressed audio/video files.
a) Streaming live
b) Streaming stored
c) Interactive
d) none of the above

1.6   You are preparing a multimedia presentation to be posted on your organization's website. You want to include images that you have gathered from the internet. What legal restriction must you consider before including these images?
a) Copyright
b) Relevance
c) Resolution
d) size

1.7   Which one of these is a video file
a) frogs.avi
b) horse.jpg
c) cat.mp3
d) All of the above

1.8   Authoring tools help you:
a) Write a storyboard
b) Search the Internet
c) Control the presentation of multimedia elements
d) All of the above

1.9   Which of the following is a common sans serif font?

a) Arial
b) Courier
c) Times
d) All of the above

1.10   A multimedia project is said to be _____ when users are NOT given navigational control.
a) Hypertext
b) Linear
c) Nonlinear
d) Plug-in

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

Tweening is the process of animating an object over a line or path that can be straight, jagged, or curved.

MIDI (Musical Instrument Digital Interface) is used by the multimedia computer to produce the music.

Animation is used to create movements on the screen.

On the Internet, only hypertext hyperlinks are hot.

Text can be developed using authoring software

JPEG and MPEG are file compression program standards.

Scrolling text make difficult to incorporate small blocks.

Animation can be used to emphasize the three-dimensional nature of objects.

Most commonly used format for graphics is .BMP or bitmap pictures.

If the sequence and timing of these multimedia elements can be controlled by the user, then one can name it as Non-Interactive Multimedia.

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

	X	Y
3.1	dots on the screen arranged in rows.	Clip Art
3.2	The creation of motion from still pictures	ASCII
3.3	Previously drawn images that artists can legally use in their own work	Authoring Software
3.4	Computer-generated worlds that created the illusion of immersion	GUI
3.5	A motion picture compression system.	Video Conferencing
3.6	standard character set for text files	Pixels
3.7	programs used to create full, multimedia productions, such as simulations and tutorials	MPEG
3.8	A computer interface using point-and-click mouse actions	Virtual worlds
3.9	transporting real-time voice and video over telecommunications services	Animation
3.10		

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

(a) Non-sequential	(b) Morphing	(c) digitized	(d) lossless	(e) RAM
(f) Virtual reality	(g) 256	(h) Resolution	(i) pixels	(j) Burning

4.1   The clarity of a monitor is known as _____.

4.2   When a program assigns 8 bits to a pixel, that pixel can display one of up to _____ colors.

4.3   When sound is digitally recorded, it is said to be _____

4.4   When a video clip merges and transforms into another image it is known as _____.

4.5   The process of copying files to a CD is known as _____

4.6   Historically, the term "hypertext" was used when textual information was linked in _____ ways.

4.7   When using a(n) _____ compression system, a file can be compressed and decompressed without loss of data.

4.8   When a digital image is currently being viewed on a computer screen, it is actively loaded into _____.

4.9   A simulated experience generated by computer, like visiting the surface of the sun or experiencing life inside a human blood cell, is called ____.

4.10   A _____ is a single point in a graphic image.

PART TWO
(Answer ANY FOUR questions)

5.

    a. What issues of functionality need to be provided in order to effectively use a wide variety of media in Multimedia applications? Your answer should briefly address how such functionality can facilitated in general Multimedia applications.

    b. What is meant by the terms Multimedia and Hypermedia? Distinguish   between these two concepts

(9+6)

6.

    a. Explain the use of the following hardware components in multimedia.

    (i) Scanner (ii) Soundcard

    b. Interactivity is among the most important feature in any multimedia applications. What is interactivity and briefly explain what makes an application interactive?

    c. What key issues or problems does a multimedia system have to deal with when handling multimedia data?

(5+5+5)

7.

    a. What is the mechanism of digitized sound? How does the computer reconstruct sound wave from a sample data?

    b. What is the advantage of MIDI over digitized sound?

    c. Explain the concept of video on multimedia.

(5+5+5)

8.

    a. What causes sound? How is sound recorded digitally?

    b. Why is data compression necessary for Multimedia activities? What is the distinction between lossless and lossy compression? What broad types of multimedia data are each most suited to?

(5+5+5)

9.

    a. What are the 3 characteristics of color? What kind of color does a computer display.

    b. What is animation? Explain the concept of key frames in designing animations.

    c. What are the key issues that need to be addressed for designing web based multimedia applications?

(5+5+5)

M4.2-R4: INTRODUCTION TO MULTIMEDIA

Assignment 1.

Create an application in HTML to design the following page :

DOEACC Society	
• DOEACC Courses • Syllabus • Duration • Examinations • Minimum Qualifications • New Batches • Feedbacks	DOEACC Society is an autonomous body under Govt. of India………………

The application should allow the user to display information that lets the students to know about :
  a)   the various DOEACC courses and the syllabus
  b)   minimum qualification required
  c)   contents and duration of courses
  d)   examinations held.
  e)   information about new batches

The students should also be able to submit the feedback forms. Provide links to information pages. The heading should be in a larger font, bold, underline, blue color and set as a marquee appearance. Apply the following formats to the left frame :

  a)   Apply unordered list with hyperlinks
  b)   Font type : Monotype Corsiva
  c)   Font Size : 18, Font Color :Red

Assignment 2.

Create an application in HTML using forms that lets the users to fill-in their personal information/resume and submit the same.

Assignment 3.

Create a simple animation (for eg: an animated face showing the movements of eyes and a smiling face) by using Macromedia Flash. Use the various Flash techniques such as :

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a) drawing tools to represent the facial features
b) motion guides
c) motion and shape tweens to animate the movements of the face
d) button symbols to start and stop animation
e) basic action scripts to handle the events.

Assignment 4.

Using the previous exercise controls, also import a sound file to provide a musical soundtrack while the movie plays. After testing the movie, publish it for playback by others, either through a browser or directly with Flash Player.

Assignment 5.

Create a scene to show the effects of morphing by changing a running tiger into the image of a motor bike. Use different keyframes to show the image of a tiger in the first frame and a motor bike in the last frame.

Assignment 6.

Create a rolling ball using Photoshop by using the concept of layers. Place some white text on this layer at the center of the image. Sphererize the text and show the effects.

Assignment 7.

Enhance the image described above to create a bouncing ball.

Assignment 8.

A mask is a special type of layer that lets you reveal selected parts of another layer, Create a mask to show the following features :

a) people walking around inside a house,
b) they should be visible when they pass by a window, but invisible otherwise.
c) Use masking techniques to create a spotlight or showing pictures behind images.

Assignment 9.

Create an application to create an animated scene where
a) a person is being chased by some animal
b) use the concept of layers consisting of
i) a background image,
ii) a series of images of a running man and
iii) a series of images of a running animal.
c) Integrate the layers to generate the effect of an animated scene.

Assignment 10.

Frames define increments on the Timeline and Keyframes are special frames to define any change in animation. Create an application to move an object eg : a shape, text or a symbol along any path created with the Flash drawing tools.

Assignment 11.

Create different layers to show the effects of morphing by changing a sapling budding into a tree. Use different keyframes to show the image of a sapling in the first frame and a tree in the last frame.

Assignment 12.

A Symbol is a graphic, button, or movie clip you create once and can use any number of times in the application. Any symbol created is automatically placed in a storage area called the library for current document. Create a symbol as a logo for your company that can be stored in a library for a Flash document as a reusable object.

Assignment 13.

Illustrate with the help of an application to create text effects with filters.

Assignment 14.

With the help of an application, list the set of actions to import images to the stage as well as to the library.

Assignment 15.

Create an application illustrating a running animal from one place to another. The image should fade away as the animal moves away from the location of sight.
  a)   specify the path of movement of animal
  b)   set the keyframes for the motion tween.
  c)   create transitions effects,
  d)   set the starting position of the object.
  e)   add multiple effects such as changing size or fading to make the object appear to grow or fade-in while it enters or fade-out and shrink as it exits.

Assignment 16.

Create an application in Flash using Text tool for creating and setting the type of text. Create a text "COMPUTER" and also draw two buttons with the functionality to grow and shrink the created text size as the user clicks the respective buttons.

Assignment 17.

A Timeline is where you control the images and sounds in the Flash documents. The Timeline is divided into frames. Create an application in Flash to demonstrate the Timeline effects for changing text, shapes and symbols.

Assignment 18.

Create an application in Photoshop to illustrate the basic Image processing techniques.

Assignment 19.

Illustrate the effect of growing and shrinking text with the help of two buttons.

Assignment 20.

Create an animated button symbol as a reusable object that can be stored in a library for a Flash document.

Assignment 21.

Illustrate the series of actions to convert an existing object such as a company picture to a symbol.

Assignment 22.

Using Shape tween, convert a square to a triangle. Use different keyframes to show the image of a square and a rectangle.

Assignment 23.

Show the effect of a flying parachute with the help of animation and motion guides.

Assignment 24.

Create an animated graphic symbol eg: an animated rollover button. Add a movie clip to be played on the button surface. Also add the timeline to show animation effects.

Assignment 25.

Illustrate with a sequence of steps publishing a movie for others to view. Publish a movie that will display on a web page.

M4.3-R4: INTRODUCTION TO ICT RESOURCES

Objective of the Course

This course has been designed to provide an introduction to Computer Hardware and Networking troubleshooting & maintenance. The student will be able to troubleshoot problems of PC and replace the defected parts of the computer. Students will understand the basic networking concepts and they will be able to establish and manage small networks.

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

- Assemble and disassemble a PC
- Effectively use miscellaneous utilities such as: Compression, CD writing, Antivirus etc.
- Establish and configure a small LAN
- Perform simple network administration operation

Outline of Course

S. No.	Topic	Minimum number of hours
1.	PC Assembly and Operation	15
2.	Miscellaneous Utilities	15
3.	Networking Concepts	15
4.	Network Administration	15

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

Detailed Syllabus

1. PC Assembly and Operation **15 Hrs.**

Assembly and Disassembly of PC and its various Parts, Startup Process (Booting), BIOS Setup, CMOS Setup and meaning of its various setting, Installation of Windows XP operating System, Installation of Other Software Packages such as Ms Office etc.

Operation of Printer, Installation of printer driver, Backup and Restore Operations

Troubleshooting PC Problems

2. Utilities **15 Hrs.**

Compression Utilities: WinZip, PKZIP, Concept of compression, Defragmenting Hard, disk using defrag, Scan Disk for checking disk space, lost files and recovery, Formatting Hard disk, Floppy Disk, Setting System Date and Time, Antivirus Package

CD Writing Sofware – Nero etc.

3. Networking Concepts   15 Hrs.

What is Networking, Local Area Networking (LANs), Metropolitan Area Network , MAN), Wide Area Network (WAN), Networking Topologies, Transmission media & method of communication, Cabling: straight through and cross over, Study of components like switches, bridges, routers, Wifi router etc., communication Protocols, TCP/IP, IP addressing, MAC address, Subnetting

4. Network Administration   15 Hrs.

Installing and configuring the network using Windows NT based System, Administration of Windows NT based network, Creation of user and groups, File Sharing, Printer Sharing

RECOMMENDED BOOKS

MAIN READING

1. Scott and Mueller, "Upgrading and Repairing PCs", Techmedia, New Delhi
2. Troubleshooting, Maintenance and Repairing PCs, Fifth Edition, by Stephen J. Bigelow, Tata McGraw-Hill Publishing Company Limited, New Delhi.
3. PC Upgrade and Maintenance Guide, 15th Edition, by Marks Minasi, BPB Publications
4. Basic of Networking. "NIIT ", Prentice, Hall of India Private Limited.
5. Networking Protocols and Standards. "NIIT ", Prentice, Hall of India Private Limited.
6. William Stallings, "Data and Computer Communication", Prentice, Hall of India Private Limited.

M4.3-R4 INTRODUCTION TO ICT RESOURCES

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 LED emits light under
   a) Reverse bias condition
   b) Forward bias condition
   c) Both (a) & (b)
   d) None of these

1.2 SMPS means
   a) System management power supply
   b) Synchronous mode power supply
   c) Switched mode power supply
   d) Sequential mode power supply

1.3 Which topology requires a central controller or hub?
   a) Mesh
   b) Star
   c) Bus
   d) Ring

1.4 The Internet model consists of ---------layers.
   a) Three
   b) Five
   c) Seven
   d) Eight

1.5   Your Windows 2000 Computer won't boot. Which tools can you use to attempt to recover
       from the system failure ?

       a)   Backup
       b)   Recovery Console
       c)   ERD
       d)   All of the above

1.6   You have a class C 192.168.10.0/28 Network. How many usable subnets and Hosts
       do you have?

       a)   16 subnet, 16 Hosts
       b)   14 subnet, 14 Hosts
       c)   30 subnet, 6 Hosts
       d)   62 subnet, 2 Hosts

1.7   For testing the network we use
       a)   domain
       b)   ping
       c)   ns
       d)   locate

1.8   BIOS is Known as_____
       a)   Basic Input Output Software
       b)   Basic Input Output System
       c)   Basic Input Operating System
       d)   None of these.

1.9   An ISP provides Internet connectivity via dial up with
       a)   MODEM
       b)   HUB
       c)   NETWORK CARD
       d)   None of the above

1.10   Which of the following can not be shared on the network?
       a)   CD-ROM
       b)   PRINTER
       c)   HARD DISK
       d)   PROCESSOR

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

2.1   Incremental backup takes less time as compared to differential backup.
2.2   CIPHER is a window2k file/folder compression utility tools.
2.3   A display option allows you to change the resolution of monitor screen .
2.5   CD-R can be written into again and again.
2.6   BIOS stand for Basic Input Output System.
2.7   Hard disk is used as secondary storage device.
2.8   If your computer has virus, just format it.
2.9   The performance of Dot Matrix Printer is better than laser Printer.

2.10   ROM can be programmed again and again.

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

	X		Y
3.1	RAM	a.	Disk Mirroring.
3.2	RARP	b.	File Encryption utility.
3.3	WinZip	c.	Grouping of one or more domain having single
3.4	Tree	d.	A type of printer
3.5	Nero	e.	File system.
3.6	Cabling Method	f.	To Resolve Hostname into logical address
3.7	FTP	g.	CD writing Software
3.8	InkJet	h.	Random Access Memory
3.9	CIPHER	i.	Network topology
3.10	NTFS	j.	To resolve MAC add (Physical address) into IP add.
		k.	To recover from system failure.
		l.	Compression Utility
		m.	A protocol for file transfer
		n.	Cross Over

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

(a) UTP	(b) 1024	(c) ATTRIB	(d) Coaxial	(e) echo
(f) Network	(g) Dos	(h) Virus	(i) 1000	(j) hard
(k) Memory	(l)Slower	(m) NTFS	(n) faster	(o) Ping

4.1   Cache memory is_____in speed than secondary storage device.
4.2   File system used by WINDOWS NT for security purpose is _____.
4.3   Maximum cable length for _____ from hub to computer is 100 meters or 328 feet.
4.4   _____is a batch file command
4.5   1 KB equals to _____ bytes.
4.6   We can boot computer from _____ disk, CD & floppy.
4.7   NTFS is termed as _____.
4.8   IP is a _____ Layer Protocol.
4.9   _____ Command is used to verify the connection between two computers.
4.10   _____ acts like an interface between user & computer.

PART TWO
(Answer ANY FOUR questions)

5.

a) Write down the step by step procedure for installation of Windows Xp operating system.
b) What do you understand by printer pools? Explain the process of configuring printers folders to mange print job?

6.

a) List out general Problems during system startup and it's troubleshooting techniques.

b) Give the constructional details of Dot Matrix Printer with the help of appropriate diagram.

(7.5+7.5)

7.

a) Why Backup is required ? List different types of Backup? How will you restore a user data stored on a magnetic tape?

b) What do you mean by SMPS ? Explain the working of SMPS with appropriate diagram.

(7.5+7.5)

8.

a) What are the different compression techniques? Discuss with example.

b) Explain about unshielded twisted pair (UTP) cable. How to prepare cross over cable with detail colour code?

(7.5+7.5)

9. Write short notes on following:

a) Switch or Router

b) TCP/IP

c) Laser Printer

(5+5+5)

M3-R4: INTRODUCTION TO ICT RESOURCES

Assignment 1.

Study of CMOS (BIOS) Configuration

Assignment 2.

New Installation of Windows XP

Assignment 3.

Using Windows XP.

Assignment 4.

Study of Control panel.

Assignment 5.

Installation of various cards (VGA, Sound, NIC, etc.) Drivers.

Assignment 6.

Study of MSDOS.SYS File and other windows system files.

Assignment 7.

Introduction to windows registry.

Assignment 8.

Backup and Restore procedures of Windows XP.

Assignment 9.

Study and identification of various parts of PC.

Assignment 10.

Assembly and disassembly of PC.

Assignment 11.

Troubleshooting of keyboard, Mouse, CDROM, Display, FDD,and Printer.

Assignment 12.

To use the compression utilities.

Assignment 13.

To install and configure antivirus package.

Assignment 14.

To use CD writing software for writing data and copy disc.

Assignment 15.

To create a Crossover cable using standard color-coding (RJ-45, UTP, Crimping tools)

Assignment 16.

To create a straight cable using standard color-coding. (RJ-45, UTP, Crimping tools)

Assignment 17.

To identify various media (STP, UTP, Co-axial, Fibre optics etc.) and its connectors.

Assignment 18.

To install NIC, installation of TCP/IP, assigning of IP address to the system..

Assignment 19.

To create a simple LAN with two PCs using a single crossover cable to connect the workstations.

Assignment 20.

To create a simple LAN with two PCs using an Ethernet hub and two straight thru cables to connect the workstations.

Assignment 21.

To setup a LAN with a number of PCs using 8/16 port HUB.

Assignment 22.

To set up a WLAN (wi-fi) router.

Assignment 23.

To use the ICMP Ping command (with switches) to verify the TCP/IP connection between the two workstations..

Assignment 24.

To study TCP/IP command utility.

Assignment 25.

To share and access a file/folders over a network.

Assignment 26.

Installation of windows 2000 server/professional..

Assignment 27.

Creation and administration of user and group accounts.