

Tel. No. 2419677/2419361  
Fax: 0821-2419363/2419301

e-mail : registrar@uni-mysore.ac.in  
www.uni-mysore.ac.in

  
**UNIVERSITY OF MYSORE**

Estd. 1916

**Vishwavidyanilaya Karyasoudha  
Crawford Hall, Mysuru- 570 005**

No.AC.2(S)/384/14-15

Dated: 28.05.2016

**NOTIFICATION**

01-6

Sub: Revised Regulations and Syllabus in Advanced Diploma in Information Technology (ADIT) from the Academic year 2016-17.

Ref: 1. Decision of the Faculty of Science & Technology Meeting held on 16.02.2016.

2. Decision of the Academic Council meeting held on 29-03-2016.

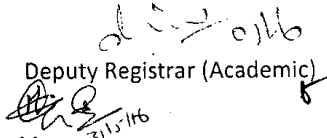
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The Board of Studies in Centre for Information Science and Technology (CIST) which met on 25-11-2015 has resolved to modify the of Syllabus and Regulations of Advanced Diploma in Information Technology (ADIT) from the academic year 2016-17.

The Faculty of Science and Technology and the Academic Council at their Meetings held on 16.02.2016 and 29.03.2016 respectively have also approved the above said proposal and the same is hereby notified.

The Revised Regulations and Syllabus in Advanced Diploma in Information Technology (ADIT) is annexed and it may be downloaded from the University Website i.e., [www.uni-mysore.ac.in](http://www.uni-mysore.ac.in)

Draft approved by the Registrar

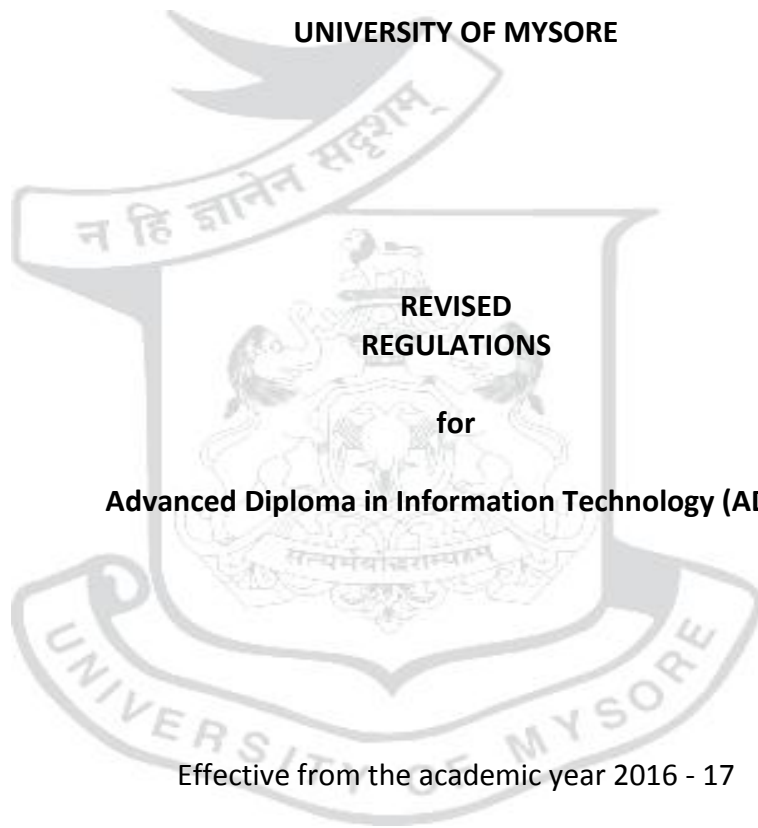
  
Deputy Registrar (Academic)

To:

1. The Registrar (Evaluation), University of Mysore, Mysore.
2. The Dean, Faculty of Science & Technology, DOS in Earth Science, MGM.
3. The Chairperson, BOS in Centre for information Science and Technology (CIST), Manasagangotri, Mysore.
4. The Director, Centre for Information Science and Technology (CIST), Manasagangotri, Mysore.
5. The Director, College Development Council, Maharaja's College Centenary Building, University of Mysore, Mysore.
6. The Deputy/Assistant Registrar/Superintendent, Administrative Branch, UOM, Mysore.
7. The Deputy/Assistant Registrar/Superintendent, Examination Branch, UOM, Mysore.
8. The P.A. to the Vice-Chancellor/Registrar/Registrar(Evaluation), UOM., Mysore.
9. Office file.

Science Notification-2016-17 Ja

**UNIVERSITY OF MYSORE**



**REVISED  
REGULATIONS**

**for**

**Advanced Diploma in Information Technology (ADIT)**

Effective from the academic year 2016 - 17

## UNIVERSITY OF MYSORE

### Regulations for the Advanced Diploma in Information Technology (ADIT)

(Effective from academic year 2016-17)

The program shall be called **Advanced Diploma in Information Technology (ADIT)**. It is a one-year program consisting of two semesters coming under the Faculty of Science and Technology. The course shall be governed by the following regulations:

#### 1. ELIGIBILITY FOR ADMISSION

- 1.1. A candidate who has passed any PUC II is eligible for admission to the first semester of the program.
- 1.2. There shall be two streams; Stream-1: From 10 a.m. to 5 p.m., Stream-2: From 8 a.m. to 10 a.m. and from 5 p.m. to 8 p.m. Regular students are admitted to Stream-1 and candidates who are employed are admitted under Stream-2. In case there are vacant seats in Stream-2, such seats shall be filled by regular students. In case of high demand, depending on the availability of faculty and infrastructure, more than one section can be formed

#### 2. INTAKE

- 2.1. There shall be a minimum of 15(fifteen) intake.
- 2.2. The merit of the candidate is the aggregate percentage of marks of second year PUC examination.
- 2.3. The selection of eligible candidates for admission to course shall be based on merit-cum-reservation policy of the government of Karnataka from time to time.

#### 3. COURSE OF STUDY

- 3.1. The course of study for the **Advanced Diploma in Information Technology (ADIT)** shall extend over a period of one year consisting of two semesters. Each semester shall be of sixteen weeks duration. The academic calendar shall be as notified by the university from time to time. However, a candidate can take a maximum of two years for completion as per double the duration norms of University of Mysore.
- 3.2. The medium of instruction shall be English.
- 3.3. There shall be five papers of theory with practicals in the first and the second semester. The hours of instruction shall be two hours/week for each theory paper and two hours of two practicals for each paper ( four hours for each practical).

#### 4. ATTENDANCE, PROGRESS AND CONDUCT

- 4.1. Each semester shall be taken as a unit for the purpose of calculating attendance.
- 4.2. The students shall attend practicals and theory classes as prescribed by the University during each semester.
- 4.3. A student shall be considered to have completed a semester if the student has attended not less than 75% of number of working periods of the course during the said semester.

4.4. The student who fails to complete the course in the manner stated in 4.3 above shall not be permitted to appear for the University examinations. Such a candidate shall enroll himself/herself in the coming two years. However the admission is subject to the availability of the seats.

4.5. If the conduct/behavior of the student is not found to be satisfactory, action will be initiated as per the University regulations

## 5. SCHEME OF EXAMINATION

5.1 There shall be a University examination at the end of each semester. The duration of theory and practical examination shall be of Two hours duration.

5.2 The duration and maximum marks and minimum marks for pass in each of the theory and practical shall be as given below:

Paper	Theory Papers and Practicals	Marks						Total	
		I.A		Theory Exam		Practical Exam		Max	Min
		Ma x	Mi n	Ma x	Mi n	Ma x	Mi n		
I Semester:									
ADIT: T-1.1	<b>IT TOOLS AND BUSINESS SYSTEMS</b>	20	7	50	18	30	11	100	40
ADIT: T-1.2	<b>PROGRAMMING IN C</b>	20	7	50	18	30	11	100	40
ADIT: T-1.3	<b>BASICS OF PC MAINTENANCE</b>	20	7	50	18	30	11	100	40
ADIT: T-1.4	<b>E COMMERCE</b>	20	7	50	18	30	11	100	40
ADIT: T-1.5	<b>DIGITAL IMAGE EDITING USING PHOTOSHOP</b>	20	7	50	18	30	11	100	40
II Semester									
ADIT: T- 2.1	<b>INTRODUCTION TO MULTIMEDIA</b>	20	7	50	18	30	11	100	40
ADIT: T-2.2	<b>BUSINESS DATA PROCESSING</b>	20	7	50	18	30	11	100	40
ADIT: T- 2.3	<b>WEB PROGRAMMING CONCEPTS</b>	20	7	50	18	30	11	100	40

ADIT: T- 2.4	<b>OBJECT ORIENTED PROGRAMMING WITH JAVA</b>	20	7	50	18	30	11	100	40
ADIT: T2.5	<b>CYBER SECURITY</b>	20	7	50	18	30	11	100	40

5.3 In the Practical examination each student should execute one question out of the 10/12 practical questions approved in the syllabus.

5.4 Change of program during lab examinations is not permitted because all the Programmes are given from the predefined list from the syllabus only.

**\*In case of practical examination, the following scheme shall be followed:**

**Writing procedure – 05 marks, Execution -12 marks, Viva-voce – 8 record-05 marks**

5.5 The internal assessment marks in each theory paper shall be awarded by the concerned course teacher based on (i) two class tests, each of one hour duration, conducted by him/ her during the semester, (ii) Assignment and (iii) one seminar. Average of the two tests to be considered as the final internal assessment marks.

**Internal assessment: 20 marks**

**Test1: 15 marks**

**Test2: 15 marks**

**Assignment: 5 marks**

**Seminar: 5 marks**

## **5 DECLARATION OF RESULTS AND CLASSIFICATION OF SUCCESSFUL CANDIDATES**

6.1 The candidate who obtains a minimum of 35% of marks in each of the theory and practical examination and a minimum of 40% of marks of theory/practical/Project examination and Internal Assessment marks put together shall be declared to have passed in the respective paper. The candidate is declared to have passed the semester if he/she passes in all the papers. The candidate who fails to get such a minimum marks in any paper(s) shall repeat the theory / practical examination of that paper. The Internal Assessment marks once awarded is final and there is no

provision for improvement. Minimum Credits for getting the Diploma: 20 credits from 2 semesters.

6.2 The Grades shall be declared on the basis of aggregate marks obtained by the candidate, who has successfully completed both the semesters of the course.

6.3 The classification of credits of successful candidates shall be as under:

**Grades in each paper:**

- |  |           |
|--|-----------|
| 1. Marks secured in the paper is 90% and above                   | - A Grade |
| 2. Marks secured in the paper is 80% and above but less than 90% | - B Grade |
| 3. Marks secured in the paper is 70% and above but less than 80% | - C Grade |
| 4. Marks secured in the paper is 60% and above but less than 70% | - D Grade |
| 5. Marks secured in the paper is 50% and above but less than 60% | - E Grade |
| 6. Marks secured in the paper is 40% and above but less than 50% | - F Grade |
| 7. Marks secured in the paper is less than 40%                   | - Dropped |

**LIST OF SUBJECTS TO BE STUDIED FOR ADIT**

<b><i>SI</i></b>	<b><i>SUBJECTS</i></b>
<b><i>01</i></b>	<b><i>Semester I</i></b> <b>ADIT 1.1 IT TOOLS AND BUSINESS SYSTEMS</b> <b>ADIT 1.2 PROGRAMMING IN C</b> <b>ADIT 1.3 BASICS OF PC MAINTENANCE</b> <b>ADIT 1.4 E COMMERCE</b> <b>ADIT 1.5 DIGITAL IMAGE EDITING USING PHOTOSHOP</b>
<b><i>02</i></b>	<b><i>SEMESTER II</i></b> <b>ADIT 2.1 INTRODUCTION TO MULTIMEDIA</b> <b>ADIT 2.2 BUSINESS DATA PROCESSING</b> <b>ADIT 2.3 WEB PROGRAMMING CONCEPTS</b> <b>ADIT 2.4 OBJECT ORIENTED PROGRAMMING WITH JAVA</b> <b>ADIT 2.5 CYBER SECURITY</b>

## ADIT 1.1: IT TOOLS AND BUSINESS SYSTEMS

### UNIT 1

#### Introduction to Computer:

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

### UNIT 2.

#### Computer Organization:

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.

### UNIT 3.

#### Operating System

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.

### UNIT 4.

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.

### REFERENCES

1. Computer Concepts Basics, Dolores J Wells, **Publisher:** Course Technology ,**Edition Number:** 4 , **ISBN:** 1423904621,**EAN:** 9781423904625, **Publish Date:** 2008-12-31
2. Computer Concepts: Illustrated Brief, Dan Oja, **ISBN:** 0538749547, **Edition:** 8 , **Publisher:**Course Technology
3. **Computer Concepts And C Programming** , [Kumar, Udaya](#); [Jeyapoovan](#); ISBN: [8125916458](#), EAN: 9788125916451, Edition: Paperback, Publisher: Vikas Publishing House
4. Computer Concepts and C Programming, [J B Dixit](#), ISBN: 8170081130 Publisher: [Laxmi publications PVT.LTD](#)
5. Computer Concepts and C Programming, Dr S Ravishankar , **Publisher:** Himalaya ,**Edition Number:** 2 ,**EAN:** CHIMPUB110247



6. Computer Concepts & C Programming, [Sangameshwara Bg](#), SANGUINE TECHNICAL PUBLISHERS, ISBN: 818884930
- 7 P.K. Sinha and P. Sinha, “Foundations of Computing” , BPB Publication, 2008.
- 8 Sagman S, “MS Office for Windows XP”, Pearson Education, 2007.
- 9 ITL Educational Society, “Introduction to IT”, Pearson Education, 2009.
- 10 Miller M, “Absolute Beginners Guide to Computer Basics”, Pearson Education, 2009.

SUPPLEMENTARY READING

- Turban, Mclean and Wetherbe, “Information Technology and Management” John Wiely & Sons.
- Mansfield Ron, “Working in Microsoft Office”, 2008, Tata McGraw-Hill
- Balagurusamy E, “Fundamentals of Computers”, 2009, Tata McGraw-Hill
- Mavis Beacon, “All-in-one MS Office” CD based views for self learning, BPB Publication, 2008
- Perry G, “MS Office 2007”, Pearson Education, 2008.
- D’Suoza & D’souza, “Learn Computer Step by Step”, Pearson Education, 2006.
- Kulkarni, “IT Strategy for Business”, Oxford University Press Refer: Open Office/ MS Office Environment for practice.

**Practical’s based on: MS OFFICE**

<b>1</b>	<p>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</p> <ol style="list-style-type: none"> <li>a) A bulleted or numbered list</li> <li>b) A table containing name, address, basic pay, department as column heading</li> <li>c) A picture of lion using clip art gallery</li> <li>d) An example of word art</li> <li>e) A header with student name &amp; date</li> <li>f) A footer with pagination</li> </ol>
<b>2</b>	<p>Create a document with the text given below and save it as <b>First.Doc</b></p> <p>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</p> <ol style="list-style-type: none"> <li>a) Count the occurrences of the word “ROM” in the above document.</li> <li>b) Replace ROM with Read Only Memory in the entire document</li> <li>c) Underline the text Read Only Memory</li> <li>d) Make an auto correct entry for ROM and it should be replaced by Read Only</li> </ol>

	Memory																																			
3	<p>3 Use first.doc to perform the following operations</p> <p>a) Make the first line of document bold</p> <p>b) Make the second line italic</p> <p>c) Underline the third line</p> <p>d) Align the fourth line to center</p> <p>e) Make the font color of first line as red</p> <p>f) Change the font style of fifth line to Arial</p> <p>g) Change the second line to 18 points</p> <p>h) Insert the date &amp; time at the start of document</p>																																			
4	<p>Use the document earlier saved and perform the page setting as follows</p> <p>Top Margin 1.3"</p> <p>Bottom margin 1.4"</p> <p>Left margin 1.30"</p> <p>Right margin 1.30"</p> <p>Gutter margin 1.2"</p> <p>Header 0.7"</p> <p>Footer 0.7"</p> <p>Paper size executive</p> <p>Orientation landscape</p>																																			
5	<p>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.</p> <table border="1"> <thead> <tr> <th>Sr. No.</th> <th>Name</th> <th>Basic Pay</th> <th>Designation</th> <th>Department</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Rahul Roy</td> <td>10000/-</td> <td>MD</td> <td>Marketing</td> </tr> <tr> <td>2</td> <td>Ritu Garg</td> <td>12000/-</td> <td>AD</td> <td>Sales</td> </tr> <tr> <td>3</td> <td>Mohit</td> <td>8000/-</td> <td>Manager</td> <td>Sales</td> </tr> <tr> <td>4</td> <td>Rakesh</td> <td>9000/-</td> <td>Senior Manager</td> <td>HR</td> </tr> </tbody> </table> <p>(a) Heading should have a font size of 18, color should be blue and font should be bold.</p> <p>(b) The data should have a font size of 12, color should be Red and font should be italic</p> <p>(c) Insert a new row between 3 &amp; 4 and type the data and reorder the sr. no column.</p>	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										
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6	<p>Create a table in word as shown below</p> <table border="1"> <thead> <tr> <th>Roll No</th> <th>Name</th> <th>Marks in Physics</th> <th>Marks in Chemistry</th> <th>Total Marks</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Ritu</td> <td>80</td> <td>70</td> <td></td> </tr> <tr> <td>2</td> <td>Rohit</td> <td>70</td> <td>80</td> <td></td> </tr> <tr> <td>3</td> <td>Amit</td> <td>60</td> <td>50</td> <td></td> </tr> <tr> <td>4</td> <td>Rakesh</td> <td>40</td> <td>60</td> <td></td> </tr> <tr> <td>5</td> <td>Niti</td> <td>30</td> <td>70</td> <td></td> </tr> <tr> <td>6</td> <td>Garima</td> <td>80</td> <td>80</td> <td></td> </tr> </tbody> </table>	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	
Roll No	Name	Marks in Physics	Marks in Chemistry	Total Marks																																
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3	Amit	60	50																																	
4	Rakesh	40	60																																	
5	Niti	30	70																																	
6	Garima	80	80																																	

	<p>Do the following</p> <p>(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.</p> <p>(b) Insert a new row at the end of the table and also find grand total using formula.</p> <p>(c) Sort the table based on total marks</p> <p>(d) The date and heading should be center aligned</p> <p>(e) Heading should be in bold and underlined</p>
<b>7</b>	<p>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</p> <p><b>Addresses are:</b></p> <p>1) Amit H No 424 sector 8D Chandigarh</p> <p>2) Rohit H No 444, Sector 125C Chandigarh</p> <p>3) Jyoti H NO 550, Sector 16A Chandigarh</p> <p><b>The Letter is</b></p> <p>To &lt;&lt;Name&gt;&gt; &lt;&lt;Address&gt;&gt; Dear &lt;&lt;Name&gt;&gt; You are called for an interview on the &lt;&lt;Date&gt;&gt;at 9:00 A.M with your original documents Yours Sincerely ABC Limited Phase –7 Mohali</p>
<b>8</b>	<p>Make a template for the bio-data with the following format</p> <p style="text-align: center;"><b>Bio-Data</b></p>

	<p><b>Name</b> :  <b>Father's Name</b> :  <b>Date of Birth</b> :  <b>Age</b> :  <b>Address</b> :</p> <p><b>Educational Qualification</b></p> <table border="1" data-bbox="402 380 1304 569"> <thead> <tr> <th>Sr No</th> <th>Qualification</th> <th>Board</th> <th>Percentage</th> </tr> </thead> <tbody> <tr> <td> </td> <td> </td> <td> </td> <td> </td> </tr> </tbody> </table> <p>Work Experience:</p>	Sr No	Qualification	Board	Percentage																																																																												
Sr No	Qualification	Board	Percentage																																																																														
<p><b>9</b></p>	<p>Type the following data in excel worksheet and save it as first.xls</p> <table border="1" data-bbox="402 720 979 1203"> <thead> <tr> <th>A</th> <th>B</th> <th>C</th> <th>D</th> <th>E</th> </tr> </thead> <tbody> <tr><td>513</td><td></td><td></td><td></td><td></td></tr> <tr><td>501</td><td></td><td></td><td></td><td></td></tr> <tr><td>504</td><td></td><td></td><td></td><td></td></tr> <tr><td>513</td><td></td><td></td><td></td><td></td></tr> <tr><td>511</td><td></td><td></td><td></td><td></td></tr> <tr><td>516</td><td></td><td></td><td></td><td></td></tr> <tr><td>532</td><td></td><td></td><td></td><td></td></tr> <tr><td>504</td><td></td><td></td><td></td><td></td></tr> <tr><td>432</td><td></td><td></td><td></td><td></td></tr> <tr><td>501</td><td></td><td></td><td></td><td></td></tr> <tr><td>510</td><td></td><td></td><td></td><td></td></tr> <tr><td>517</td><td></td><td></td><td></td><td></td></tr> <tr><td>479</td><td></td><td></td><td></td><td></td></tr> <tr><td>494</td><td></td><td></td><td></td><td></td></tr> <tr><td>498</td><td></td><td></td><td></td><td></td></tr> </tbody> </table> <p>Do the following</p> <ol style="list-style-type: none"> <li>Highlight column A and copy it to column C</li> <li>Sort the data in column C in ascending order</li> <li>What is the lowest number in the list (use a function)</li> <li>Copy the data in column A to column E and sort it in descending order</li> <li>What is the highest number in the list (use a function)</li> <li>How many numbers in this list are bigger than 500 (use a database function)</li> <li>How many numbers in column A are between 520 and 540 inclusive (use a database function)</li> </ol>	A	B	C	D	E	513					501					504					513					511					516					532					504					432					501					510					517					479					494					498				
A	B	C	D	E																																																																													
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<p><b>10</b></p>	<p>Create 15 student s marks card with 6 papers marks and calculate total, average , percentage declare results and class. Plot 3d bar graph and line graph.</p>																																																																																
<p><b>11</b></p>	<p>Create a presentation in PowerPoint using all the menus</p>																																																																																
<p><b>12</b></p>	<p>Create a table with the following field names in MS-Access</p> <p><b>Name of field Data type</b></p> <p>Book_name Varchar  Purchase_date Date  Price Numeric  Author_name Varchar</p>																																																																																

	<p>Do the following</p> <p>a) Enter 5 records in the table using forms</p> <p>b) Display list of books in alphabetical order using reports</p> <p>c) Display list of books in ascending order of price</p>
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## **PGDSD 1.2 Programming in C and Data structure**

### **UNIT-1**

C Language Preliminaries Introduction, History and features of C, Characteristics of C, Applications of C. Constants and Variables, Fundamentals of C, Variables, Constants, Data Types, int, float, char, double. Input-Output statements, formatted input, formatted output statements, Unformatted input statements, unformatted output statements.

### **UNIT-2**

Operators In C, C operators, unary operator, binary operator, arithmetic operator, increment operator, Decrement operator, relational operator, logical operator, bit wise operator, ternary Operator, comma operator, size of ()-operator, mathematical functions, header files, Preprocessor directives. Control Statements, Conditional control statements, if-statements, if-else statements, nested if- statements, Switch-statements, go to statement. Loop Control Structures, while statement, do-while statement, for statement, nested for statement, break Statement, continued statement.

### **UNIT-3**

Arrays, Definition, classification of arrays, declaration of an array, One-dimensional array & Multidimensional arrays. Functions Function definitions, arguments and parameters, category of functions, function with No arguments and no return values, function with arguments but no return value, Functions with no arguments and return values, local and global variables. Pointers, Definition, call by value and call by reference, pointer declaration, and pointer notations. Strings, declaring and initializing string variables, reading and writing strings, string handling functions.

### **UNIT-4**

Structures And Unions, Definitions, declarations, embedded structure declarations, initialization of a Structure, array of structures, unions, definitions, declarations, accessing union Members, and initialization. File operations, Data organization, file operations, opening a file, reading from a file, trouble in Opening a file, closing the file. Advanced concepts Bit fields, Marcos, types def. Introduction to data structures, singly linked lists, doubly linked lists, circular list, representing stacks and queues in C using arrays and linked lists, infix to post fix conversion, postfix expression evaluation. Trees- Binary tress, terminology, representation, traversals, graphs- terminology, representation, graph traversals (dfs & bfs)

### References:

- 1) The C Programming Language, B.W. Kernighan, Dennis M. Ritchie, PHI/Pearson Education
- 2) Computer Concepts and C Programming P.B. Kotur Sapna Book House
- 3) Programming in C, E. Balagurusamy, Tata McGraw Hill
- 4) Let us C, Yashavant P. Kanetkar, BPB Publications
- 5) Computer Basics and C, V Rajaraman, Tata McGraw Hill
- 6) Programming With C, Gottfried, Schaums Outline Series, Tata McGraw Hill Publications
- 7) Computer science, A structured programming approach using C, B.A. Forouzan and R.F. Gilberg, Third edition, Thomson.
- 8) Data Structures Using C - A.S. Tanenbaum, Y. Langsam, and M.J. Augenstein, PHI/Pearson education.
- 9) C & Data structures - P. Padmanabham, B.S. Publications.
- 10) C Programming with problem solving, J.A. Jones & K. Harrow, Dreamtech Press
- 11) Programming in C - Stephen G. Kochan, III Edition, Pearson Education.
- 12) Data Structures and Program Design in C, R. Kruse, C.L. Tondo, BP Leung, Shashi M, Second Edition, Pearson Education.

### Practical's based on Programming in C and Data structure

<b>01</b>	Write a program to find sum of all prime numbers between 100 and 500.												
<b>02</b>	Write a program to reverse the digits of a given number. For example, the number 9876 Should be returned as 6789												
<b>03</b>	Write a program to compute the wages of a daily laborer as per the following rules <table><thead><tr><th>Hours Worked</th><th>Rate Applicable</th></tr></thead><tbody><tr><td>Upto first 8 hrs</td><td>Rs 50/-</td></tr><tr><td>For next 4 hrs</td><td>Rs 10/- per hr extra</td></tr><tr><td>For next 4 hrs</td><td>Rs 20/- per hr extra</td></tr><tr><td>For next 4 hrs</td><td>Rs 25/- per hr extra</td></tr><tr><td>For rest</td><td>Rs 40/- per hr extra</td></tr></tbody></table> 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	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
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												
<b>04</b>	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												
<b>05</b>	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.												
<b>06</b>	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.
<b>07</b>	<p>Write a menu driven program to maintain a Telephone Directory having following file structure:</p> <ol style="list-style-type: none"> <li>1. Name : Character type : Length =20 characters.</li> <li>2. Address : Character type : Length =40 characters.</li> <li>3. Phone: Character type : Length =12 characters.</li> </ol> <p>Menu</p> <ol style="list-style-type: none"> <li>1. Add record(s)</li> <li>2. Display record(s)</li> <li>3. Search record(s)</li> <li>4. Modify record(s)</li> <li>5. Delete record(s)</li> <li>6. Backup copy of File</li> <li>7. Exit</li> </ol> <p>Type your choice= 1,2,3,4,5,6,7— -&gt;</p>
<b>08</b>	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.
<b>09</b>	Write a program to display the Following pattern called Floyed's Triangle. <pre> 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 </pre>
<b>10</b>	<p>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 :-</p> <ol style="list-style-type: none"> <li>a) Accept data for EmployeeName, EmployeeCode, BasicPay for all the employees.</li> <li>b) Compute :- <ol style="list-style-type: none"> <li>a. DearnessAllowance = 50% of BasicPay</li> <li>b. HRA = 20% of BasicPay + DearnessAllowance</li> <li>c. PF = 12% of BasicPay + DearnessAllowance</li> <li>d. GrossPay = BasicPay + DearnessAllowance + HRA</li> <li>e. NetPay = GrossPay – PF</li> </ol> </li> <li>c) Display the name of employee who has highest GrossPay.</li> <li>d) Compute and display average net pay.</li> <li>e) Display list of all employees in the alphabetical order of employee name.</li> </ol>
<b>11</b>	Write a program to convert a given decimal number to its binary equivalent and vice versa.
<b>12</b>	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

## ADIT 1.3: BASICS OF PC MAINTENANCE

### UNIT 1

Troubleshooting, General PC Problems: Introduction, General Troubleshooting rules, Common Problems & Solutions, Preventive Maintenance. BIOS: Typical Motherboard BIOS, BIOS Features, BIOS & Boot Sequences, BIOS Shortcoming & Compatible Issues, BIOS Troubleshooting, BIOS Upgrades. Installing & configuring ANTI VIRUS.

### UNIT 2

Hard Disk: Introduction, Disk Basics, Disk Performance & Characteristics, Drive, Construction, Drive Testing & troubleshooting. Motherboard & Buses: Introduction, Motherboard Components, Expansion Slots system Bus Functions & Features. Upgrading & Troubleshooting Motherboard, General Bus Troubleshooting.

### UNIT 3

Basic Memory Concepts: Introduction, Installing Memories, Upgrade Options & Strategies, Replacing Memories with Higher Capacity. Troubleshooting Memory.

### UNIT 4

**Printers:** Printer Technology, How Printer Works, Attaching Printer, Installing Printer Drivers, Preventive Maintenance, And Common Printer Problems & Solution Error Code: Beep Code, Post Code, Post Reader Card.

### References

1. Upgrading & Repairing PCs : Muller – Prentice Hall – 10th Edition, 2000.
2. Complete PC Upgrade & Maintenance Guide : Mark Minasi–BPB Publishers–15th Edition, 2004. Learning PC hardware – Bangia ramesh khanna book Pub private
3. Bigelow Stephen J P. C Touble shooting and repair Dremtech press
4. PC software made simple Taxali R. K Tata MC Graw – Hil[ Publishing company
5. Operating System – Godbole Achyut Tata MC Graw – Hil[ Publishing company
6. Operating System Deitel Harrey .M. Pearson education Asia

### Practical's based on Basics Of Pc Maintenance

<b>01</b>	New Installation of Windows 7 or 10
<b>02</b>	Study of CMOS (BIOS) Configuration
<b>03</b>	Study of Control panel
<b>04</b>	Installation of various cards (VGA, Sound, NIC, etc.) Drivers.
<b>05</b>	Study of MSDOS.SYS File and other windows system files.
<b>06</b>	Introduction to windows registry
<b>07</b>	Backup and Restore procedures of Windows 7/10.
<b>08</b>	Study and identification of various parts of PC
<b>09</b>	Assembly and disassembly of PC
<b>10</b>	Troubleshooting of keyboard, Mouse, CDROM, Display, and Printer



<b>11</b>	To use the compression utilities
<b>12</b>	To install and configure antivirus package
<b>13</b>	To use CD writing software for writing data and copy disc

## **ADIT 1.4: E COMMERCE**

### **UNIT 1**

Introduction to E-commerce: Introduction, E-commerce or Electronic Commerce- An Overview, Electronic Commerce – Cutting edge, Electronic Commerce Framework. Evolution of E-commerce: Introduction, History of Electronic Commerce, Advantages and Disadvantage of E-commerce, Roadmap of e-commerce in India

### **UNIT 2**

Network Infrastructure: Introduction, Network Infrastructure- An Overview, The Internet Hierarchy, Basic Blocks of e-commerce, Networks layers & TCP/IP protocols, The Advantages of Internet, World Wide Web

### **UNIT 3**

E-commerce Infrastructure: Introduction, E-commerce Infrastructure-An Overview, Hardware, Server Operating System, Software, Network Website. Managing the e-Enterprise: Introduction, e- nterprise, Managing the e-Enterprise, E-business Enterprise, Comparison between Conventional Design and E-organization, Organization of Business in an e-Enterprise

### **UNIT 4**

e-Commerce Process Models: Introduction, Business Models, E-business Models Based on the Relationship of Transaction Parties, e-commerce Sales Life Cycle (ESLC) Model, Risks of Insecure Systems: Introduction, An Overview of Risks Associated with Internet Transactions, Internet Associated Risks, Intranet Associated Risks, risks associated with Business Transaction Data Transferred between Trading Partners. Management of Risk: Introduction, Introduction to Risk Management, Disaster Recovery Plans, Risk Management Paradigm

### **UNIT 5**

Electronic Payment Systems: Electronic Payment Systems, Electronic Cash, Smart Cards and Electronic Payment Systems, Credit Card Based Electronic Payment Systems, Risks and Electronic Payment Systems

### **References**

1. E-Commerce Concepts, Models, Strategies- :- G.S.V.Murthy Himalaya Publishing House

2. E- Commerce :- Kamlesh K Bajaj and Debjani Nag
3. Electronic commerce :- Gray P. Schneider 4. E-Commerce, Fundamentals & Applications : Chand (Wiley)

#### Practical's based on E Commerce

01	Create a bio-data form using HTML. Create u text in a web page and hyper link it in such a way that if we click on the link, it should go to the bottom of the page
02	Write the name of your favorite mall in h3 size and apply sliding marquee.
03	Create a web page of an Restaurant with Name of the Restaurant in h3, scrolling from left to right, list of 10 items served in unordered list and hyperlinks to 10 items which on click of mouse give information about each item served.
04	Create a web page using HTML which will /feature an image and surrounded by names of politicians on all the four sides. b. Create a table with 2 rows and 5 columns
05	Create a HTML program which contains name of your college, aligned in all four comers of the web page with each in different color.
06	Create an HTML program which contains the HAPPY NEW YEAR 2016 in H3 size and it should be blinking, with background in red color.
07	Write a program to create two inline frames
08	Create two frames with name of your college in left frame and your name in right frame with hyper links to a new page named Mysore University.
09	Create a program to create pull-down menu.
10	Add few form elements such as radio buttons, check boxes and password field. Add a submit button at last.
11	Write an HTML program which consists of at least 3 logical style tags.
12	Create a simple form to submit user input like his name, age, address and favorite subject, movie and singer
13	Write a JavaScript program to change background color after 5 seconds of page load.

### ADIT 1.5: DIGITAL IMAGE EDITING USING PHOTOSHOP

#### UNIT 1

Introduction of PhotoShop, Creating a New File, Main Selections, Picking color, Filling a selection with color, More ways to choose colors and fill selections, Painting with paintbrush tool, Using the magic wand tool and applying a filter, Saving your document Color Mode, Gray Scale Color Mode, RGB Color Mode, CMYK Color Mode, Bitmap Mode, Open a file, Preference, Foreground & background, Changing Foreground and Background colors,

#### UNIT 2

Using the Large color selection Boxes and small color swathes, Using the Eyedropper tool to sample Image color, Changing the Foreground Color While using a Painting Tool, Using Brushes, Selecting the Brush Shape, Drawing a vertical and Horizontal Straight lines with any brush, Drawing connecting Straight Lines ( at any angle) with any brush, Creating a New

Brush, Saving Brushes, Loading Brushes, Creating a Custom Brushes, Using the Painting Modes, Fade, Airbrush Options, Pencil Options

### UNIT 3

Rubber stamping an Aligned Clone, Rubber Stamping, Impressionist Style, Using line tool, Using the Editing Tool, The Smudge Tool, The Blur and Sharpen Tool, The Dodge / Burn Tool, Shadows, Mid,tones and Highlights, Selection Tools, Making Rectangular and Square Selections, Feathering a Selections, Lasso Features, Lasso Options, Making selections by color or Gray Scale value using the Magic Wand, Moving an anchor point or Direction point to change the shape of curve, Adding and Removing Anchor points, Moving Path, Saving, Loading and Creating New Path, Filling & Stroking Path

### UNIT 4

Introduction of layers, Creating & editing New layers, Adding a background, Creating Layer Mask, Layer Masks, Adjustment Layers, Adding Fills and Gradients, Filling with paint bucket tools, Filling type with grading Fills, Applying Filters, Blur Filters, Render Filters, Sharpen Filters, Sketch Filters, Texture Filters, Other Special Filters, Printing your document, Save your file, Save file as a JPEG, TIFF, GIF, PNG

### References

1. *Anil madan, multimedia systems design*
2. *Learning multimedia*
3. *Barstow Bruce & Martin tony, photoshop 7 - the ultimate reference*
4. *Burke daronthy & Clabria jane, multimedia systems*
5. *Chapra steven.c & Canale raymond.p., digital multimedia*
6. *David matthew, multimedia technology application*
7. *Muley.d.s., fundamentals of computers graphics and multimedia*  
*Pender Thomas p, multimedia - a hands on introduction*

### Software: Digital Image Editing Using Photoshop

01	Simple text effects
02	Image restoration
03	Image manipulation in Photoshop
04	Movie poster concept
05	Creating story board
06	Digital scenery creation
07	UI Design for smart phones
08	Creating website layout
09	Set extension in Photoshop
10	Digital Matte painting

## ADIT 2.1: INTRODUCTION TO MULTIMEDIA

UNIT I – Multimedia System Design: An Introduction Multimedia Elements, Multimedia Applications, Multimedia System Architecture, Evolving Technologies for Multimedia Systems, Multimedia Databases

UNIT II –Compression and Decompression Techniques Types of Compression, Binary Image Compression Schemes, Color, gray scale, still-video image compression, Discrete Cosine Transform, Video Image compression, MPEG Coding methodology, Audio Compression, Data and File format standards- RTF, TIFF,RIFF, MIDI, JPEG, AVI, JPEG, TWAIN Architecture.

UNIT III – MULTIMEDIA INPUT AND OUTPUT TECHNOLOGIES Key Technology Issues, Pen Input, Video and Image Display Systems, Print Output Technologies, Image Scanners, Digital Voice and Audio, Video Images and Animation, Full Motion Video.

UNIT IV– STORAGE AND RETRIEVAL TECHNOLOGIES Magnetic Media Technology, RAID- Level-0 To 5, Optical Media, WORM optical drives, Hierarchical Storage Management, Cache Management for storage systems.

UNIT V– MULTIMEDIA APPLICATION DESIGN Types of Multimedia systems - Virtual Reality Design - Components of Multimedia system - Distributed Application Design Issues - Multimedia Authoring and User Interface - Hypermedia Messaging - Distributed Multimedia Systems

### REFERENCES

1. Andleigh PK and Thakrar K, “Multimedia Systems”, Addison Wesley Longman, 1999.
2. Fred Halsall, “Multimedia Communications”, Addison Wesley, 2000.
3. Ralf Steinmetz, Klara Nahrstedt, “Multimedia, computing, communications and applications”, Prentice Hall, 1995.
4. Tay Vaughan, “Multimedia making It work”, TMH 5th Edition 2001.
5. Weixel, Fulton, Barksdale.Morse, “Multimedia Basics”, Easwar Press 2004

### Practical’s based on: Introduction to Multimedia

01	Graphics Image File Formats Raster Format,• Bitmap (BMP) Format,• Graphics Interchange Format (GIF),• Joint Photographic Experts Group (JPEG),• Tagged Image File Format (TIFF),• Portable Network Graphics (PNG) and their differences.•
02	Digital Audio: Audio Sampling, Recording Digital Audio, Audio Standards for Multimedia Applications
03	MIDI File Formats, MIDI Hardware and Software. Image Compression Standards: Types.• Video Compression and Standards: Compression Standards,• MPEG Compression Basics, MPEG-1, MPEG-2, and MPEG-4 Hypertext and Hypermedia•
04	Recording / editing sound using software (Audition/ Sound booth)
05	Making/ Importing and manipulating bitmap images/ graphics using software (Photoshop)
06	Using layers /fillers / Channels to collate/ combine images; capture and assemble

	video using software (Adobe Premier / avid) and mix audio.
<b>07</b>	Using digital camera capture image and editing using software
<b>08</b>	Using Digital video capture and editing using software.
<b>09</b>	Creating power point presentation with image, audio,video and animation on any topic.
<b>10</b>	Create a brochure on any subject in MS word.
<b>11</b>	Create a brochure on any subject in photoshop.
<b>12</b>	Create a web site of any company with all multimedia elements.

## **ADIT 2.2: BUSINESS DATA PROCESSING**

### **UNIT 1**

Meaning and purpose of Data processing - Source documents data input data Manipulation - Output of information - data storage -Files and Records - file creation - File access - File manipulation and maintenance - File generation - sequential and Direct file organisation.

### **UNIT 2**

Meaning and purpose of windows - menus - Dialog Boxes - File Management under Windows, features of word processing under Windows - Microsoft Word - File Menu - Using Letter wizard for producing business letters -Entering, selecting, inserting, viewing text - Normal view - Page view - Point view - Zooming the view - character and paragraph formating - Printing a document.

### **UNIT 3**

Introduction to spreadsheet - spreadsheet overview - formating worksheet Data - Relative and absolute Referencing - working with Formula working with Functions - Creating and using Macros - Data Management through worksheets - analysis through charts/graphs - Setting print Styles - Printing worksheets and charts/Graphs.

### **UNIT 4**

Introduction to database - concepts of relational Database Management Applications - Types of Database Models - Network Model Heirarchical Model - RDBMS - ORDBMS.

### **UNIT5**

Introduction to SQL - Parts of SQL-- DML, DDL, DCL and Query Language creating and manipulating tables -Inserting data into tables Restricting and validating Data Entry with Constraints - creating simple reports using oracle Plus Report Manager - Maintaining users and Database Administration - user creation - Roles and Privileges concepts of Front -end Applications - Need for data entry screens - D2k as a front -and tool. Working with D2K forms Designer - forms, Menus, Tool Bars, D2K reports for better Reporting of Data - Master detail reports.

## References:

1. John Shelly and Roger Hunt, Computer Studies : A first course, PHI
2. Guy Hart-Davis, The ABCs of Microsoft office, BPB
3. Ivon Byross - Developing Commercial Applications using Developer 2000 version 2 (Forms 5 and Reports 3)

## Practical's based on: Introduction to Multimedia

01	SQL;-create table .Insert rows
02	Create Table, Insert rows and update.
03	Alter existing table structure (ALTER-ADD, MODIFY, DELETE).
04	Simple queries based on single table to view rows.
05	Simple queries based on multi table
06	Complex queries based on single and multi table.
07	Practical by making use of IF..ELSE.
08	Practical by making use of FOR-LOOP
09	Practical by using WHILE-LOOP
10	Practical by making use of PL / SQL Block.
11	Practical by using cursors.
12	Practical by making use of – (% type, & row type)

## ADIT 2.3: WEB PROGRAMMING CONCEPTS

### UNIT 1

Introduction to Java and its Features, Introduction to object oriented paradigm, Concepts of Object - Oriented programming (Objects and Classes, data abstraction and data abstraction and encapsulation, inheritance, polymorphism, Dynamic binding). Basics of Java, Java history; Java features (Compiled and interpreted, Platform-independent and portable, Object - Oriented, Robust and Secure, Distributed, Simple, Small and Familiar, Multithreaded and interactive, High performance, Dynamic and extensible); How Java differs from C and C++.

### UNIT 2

Classes, Objects and Methods, Introduction, Defining a class, adding variables and methods, creating objects, accessing class members, constructors, method overloading and overriding, this keyword, finalize () and garbage collection, inheritance and abstract classes. Packages - Introduction, Java API packages, using system packages, naming conventions, creating packages, accessing a package, using a package, adding a class to a package, Java script

### UNIT 3

Interfaces - Introduction, Defining interfaces Extending Interfaces, implementing interfaces, accessing interface Variables. Managing Error and Exceptions - Introduction, types of errors (Compile-time and run-time errors), Exceptions, syntax of exception Handling code, multiple catch statements, using finally statement, throwing our own exceptions.

#### UNIT 4

Applet Programming - Introduction, how applets differ from applications, building applet code, applet Life Cycle (initialization state, running state, idle or stopped state, dead state, Display state, Creating an executable applet, designing a web page, AWT and swings Event handling. Managing Input/Output files in Java - Introduction, concept of streams, stream classes, byte stream classes, character stream classes, using Streams, other useful I/O classes, and introduction to JDBC.

#### Reference

1. The Java Handbook, by Patrick Naughton, Michael Morrison Publisher: Osborne/McGraw-Hill ,ISBN: 0-078-82199-1 ,Pages: 424 ,Publication Date: April, 1996
2. **Object-Oriented Programming From Problem Solving to Java** ,Jose M. Garrido , ISBN : 81-7008-625-6 , Edition : 2004 ,Pages : 360 ,
3. **Keeping Ahead - Java 2** ,Benjamin Aumaiile ,ISBN : 81-7008-470-9 ,Edition : 2006  
**Simply Java An Introduction to Java Programming**, James R. Levenick, ISBN : 978-81-318-0200-7 ,Edition : 2007
4. **Internet & Java Programming**, Harish Kumar Taluja ,ISBN : 978-81-318-0367-7 ,Edition : First, 2008
5. **Programming Engineering Computations in Java** ,Dr. Raja Subramanian, ISBN : 978-81-318-0209-0 ,Edition : First, 2007
6. **Secrets of JAVA** ,Er. R. Kabilan ,ISBN : 978-81-318-0720-0, Edition : First, 2009
7. **Advance Java**, Gajendra Gupta ,ISBN : 81-7008-940-9 ,Edition : First, 2006
8. **HTML & JavaScript for Visual Learners** , Chris Charuhas , ISBN : 81-7008-359-1 Edition : 2008

#### Practical's based on: Web Programming Concepts

<b>01</b>	Create the following HTML page With body tag and its attributes, paragraph tag and attributes
<b>02</b>	Create a web page in html with 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
<b>03</b>	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.
<b>04</b>	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
<b>05</b>	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
<b>06</b>	Write a Java script and HTML DOM Animation
<b>07</b>	Write the programme for Browser Window Manipulation using Java script.
<b>08</b>	Develop Contact Form using Java script.
<b>09</b>	Develop Quiz application using HTML and Java script.
<b>10</b>	Develop a web page for landing of a new product.

## **ADIT 2.4: OBJECT ORIENTED PROGRAMMING WITH JAVA**

### **UNIT 1**

Classes and Objects - Introduction, structures and classes, declaration of classes, member functions, defining the object of the class, accessing a member of class, array of class objects, pointer and classes, classes with classes (Nested class), Constructors, copy constructor, default constructor, Destructors, inline member Functions, Friend functions, Dynamic memory allocations, this pointer.

### **UNIT 2**

Inheritance - Introductions, single inheritance, types of derivations, public inheritance, private inheritance, protected inheritance, array of class objects and single inheritance, Multiple inheritance, multilevel inheritance, hybrid inheritance.

### **UNIT 3**

Overloading - Function overloading, function overloading with various data types, function overloading with arguments, operator overloading, overloading assignment Operator, overloading of binary operator, overloading arithmetic operator, Overloading of comparison operator, overloading of unary operator.



## UNIT 4

Polymorphism - Polymorphism, early binding, virtual functions, late binding, pure virtual Functions, abstract base classes, virtual base classes. Templates and Exception Handling, Function templates, class templates, Exception handling. Data File Operations - Opening and closing of files, opening a file, closing a file.

### References

1. Herbert Schildt, C++ The Complete Reference, Tata McGraw Hill Publication.
2. Paul S. Wang, Standard C++ with Object Oriented Programming, Thomson Learning.
3. E. Balagurusamy, C++, Tata McGraw Hill Publication.
4. B. A. Forouzon, R. F. Gilberge, and Computer Science: A Structured Approach Using C++, 2/e, Thomson Learning.
5. Stroustrup B., The C++ Programming Language, Addison Wesley.
6. D Ravichandran, Programming with C++, Tata McGraw Hill Publication.

### Practical's based on: Object Oriented Programming With Java

01	Write a program to check whether a given number is prime or not.
02	Write a program to check whether the given year is leap year or not.
03	Write a program to find the Sum of the series $x+x^2/2! +x^3/3! +...+x^n/n!$ 4.
04	Write a program to find and replace a word with a string.
05	Write a program to prepare the mark list using Inheritance
06	Create a simple calculator applet that implements the basic mathematical function
07	Write a JAVA applet to calculate the payroll of employees.
08	Write a JAVA applet to create a simple spread sheet.
09	Create a program to perform Banking Transactions.
10	Create a Program to display the resume of employees.
11	Write a java program to present a set of choices for a user to select Stationary products and display the price of Product after Selection from the list.
12	Write a java program to demonstrate typical Editable Table, describing employee details for a software company.

## ADIT 2.5: CYBER SECURITY

### UNIT 1

Systems Vulnerability Scanning Overview of vulnerability scanning, Open Port / Service Identification, Banner / Version Check, Traffic Probe, Vulnerability Probe, Vulnerability Examples, OpenVAS, Metasploit. Networks Vulnerability Scanning - Netcat, Socat, understanding Port and Services tools - Datapipe, Fpipe, WinRelay, Network Reconnaissance – Nmap, THC-Amap and System tools. Network Sniffers and Injection tools – Tcpcdump and Windump, Wireshark, Ettercap, Hping Kismet

## **UNIT 2**

Network Defense tools Firewalls and Packet Filters: Firewall Basics, Packet Filter Vs Firewall, How a Firewall Protects a Network, Packet Characteristic to Filter, Stateless Vs Stateful Firewalls, Network Address Translation (NAT) and Port Forwarding, the basic of Virtual Private Networks, Linux Firewall, Windows Firewall, Snort: Introduction Detection System

## **UNIT 3**

Web Application Tools Scanning for web vulnerabilities tools: Nikto, W3af, HTTP utilities - Curl, OpenSSL and Stunnel, Application Inspection tools – Zed Attack Proxy, Sqlmap. DVWA, Webgoat, Password Cracking and Brute-Force Tools – John the Ripper, LOhtcrack, Pwdump, HTC-Hydra

## **UNIT 4**

Introduction to Cyber Crime Investigation Firewalls and Packet Filters, password Cracking, Keyloggers and Spyware, Virus and Worms, Trojan and backdoors, Steganography, DOS and DDOS attack, SQL injection, Buffer Overflow, Attack on wireless Networks

## **Reference**

### **Practical's based on: Cyber Security**

<b>01</b>	Installation of desktop password
<b>02</b>	Installation of users and administrator and its use.
<b>03</b>	Windows securities
<b>04</b>	Installation of antivirus
<b>05</b>	Blocking spam, virus Trojan and bugs
<b>06</b>	email security using password
<b>07</b>	Password Cracking
<b>08</b>	Introduction to types Cyber crime and Cyber terrorism
<b>09</b>	Fire wall installation
<b>10</b>	TCP scanning using NMAP
<b>11</b>	Port scanning using NMAP
<b>12</b>	TCP / UDP connectivity using Net cat