SACRED HEART COLLEGE (AUTONOMOUS)

Tirupattur – 635 601, Tamil Nadu, S.India

Ready for
Every Good Work

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A Don Bosco Institution of Higher Education, Founded in 1951 * Affiliated to Thiruvalluvar University, Vellore * Autonomous since 1987

Accredited by NAAC (4th Cycle – under RAF) with CGPA of 3.31 / 4 at 'A+' Grade

Sacred Heart College (Autonomous), Tirupattur District

1.2.1 List of New Courses

Department: B. SC. COMPUTER SCIENCE

B.Sc. Computer Science

Sem	Part	Code	Subject Title	Hours	Credit(s)
I	I		Tamil – I	5	3
	II		English – I	5	3
	III		Allied – I: Mathematics – I	6	4
	III	CS117	Digital Computer Fundamentals	4	4
	III	CS118	Web Design Concepts	4	4
	III	PCS107	Practical I: Web Design Concepts	2	2
	IV		Personal Skills	2	1
	IV		Christian Religion - I / Value Education - I	2	1
	IV		Communicative English – I	-	1
				30	23
II	I		Tamil – II	5	3
	II		English – II	5	3
	III		Allied – I: Mathematics – II	6	4
	III	CS218	Computer Organization and Architecture	4	4
	III	CS219	Programming with C	4	4
	III	PCS211	Practical II: Programming with C	2	2
	IV		Social Skills	2	1
	IV		Christian Religion - II / Value Education – II	2	1

				Hours	Credit(s)
	IV		Communicative English – II	-	1
				30	**23**
	I		Tamil – III	5	3
	II		English – III	5	3
	III		Allied – II: Physics – I	4	3
	III	**CS319**	Object Oriented Programming with C++	4	4
	III	**CS320**	Data Structures and Algorithms	4	4
III	III	**PCS308**	Practical - III: Data Structures and Algorithms	2	2
	III		Practical: Allied – II: Physics – I	2	1
	IV		Employability Skills – I	2	1
	IV		Environmental Science	2	1
				30	**22**

Sem	Part	Code	Subject Title	Hours	Credit(s)
	I		Tamil – IV	5	3
	II		English – IV	5	3
	III		Allied – II: Physics – II	4	3
	III	**CS419**	Computer Graphics	4	4
	III	**CS420**	Relational Database Management Systems	4	4
	III	**PCS411**	Practical - IV: Relational Database Management Systems	2	2
	III		Practical : Allied – II: Physics - II	2	1
IV	IV		Employability Skills – II	2	1
	IV		Human Rights	2	1
	V		DEEDS	-	2
	V		SHELTERS	-	2
				30	**26**
	III	**CS534**	Programming with JAVA	5	5
	III	**CS535**	Linux and Shell Programming	5	5
	III	**CS536**	Operating Systems	5	5
	III	**CS537**	Programming with PHP	**2**	**2**
V	III	**CS538**	Elective - I Software Engineering	4	3
	III	**PCS512**	Practical - V: Programming with JAVA	2	2

	III	PCS513	Practical - VI: Linux and Shell Programming	2	2
	III	PCS514	Practical - VII : Programming with PHP	2	1
	III		Project Work	1	-
	III		Non-Major Elective – I	2	1
	VI		SSP1: Industrial Plant Training	-	1@
				30	26 + 1@
VI	III	CS627	Microprocessor and its Applications	5	5
	III	CS628	Web Development using XML	5	5
	III	CS629	Mobile Apps – Android Development	5	5
	III	CS630	Programming with R	2	2
	III	CS631	Elective – II Computer Networks	4	3
	III	PCS623	Practical - VIII: Microprocessor and its Applications	2	2
	III	PCS624	Practical - IX: Web Development using XML	2	2
	III	PCS625	Practical - X: Programming with R	2	1
	III		Project Work	1	2
	III		Non-Major Elective – II	2	1
	VI		SSP2: Quantitative Aptitude	-	1@
				30	28+1@
			Total	**180**	**148+2@**

Sacred Heart College (Autonomous), Tirupattur District

1.2.1 List of New Courses

Department: B. SC. COMPUTER SCIENCE

S. No.	COURSE CODE	COURSE NAME
1.	CS537	Programming with PHP
2.	PCS514	Practical –VII: Programming with PHP
3.	CS628	Web Development using XML
4.	CS629	Mobile Apps Android Development
5.	CS630	Programming with R
6.	PCS624	Practical –IX: Web Development using XML
7.	PCS625	Practical –X: programming with R
8.	CS539X	Industrial Plant Training
9.	CS632X	Quantitative Aptitude

CS537 - PROGRAMMING WITH PHP

1. **Learning Objectives**
   - To learn about PHP is a server scripting language, and a powerful tool formaking dynamic and interactive Web pages
   - To Understand File handling concepts
   - Understanding PHP code to connect, access, and update a MySQL database
   - Understanding PHP using XML

2. **Blue Print of the Question Paper**

Section	I-Unit	II-Unit	III-Unit	IV-Unit	V-Unit
Section-A	1-2	3-4	5-6	7-8	9-10
Section-B	11.a)Theory(OR) b) Program	12.a)Theory(OR) b) Program	13.a)Theory(OR) b) Theory	14.a)Theory(OR) b) Program	15.a) Theory (OR) b) Theory
Section-C	16.Theory (OR) Program	17.Theory	18.Theory	19.Theory(OR) Program	20.Theory

3.Course Outline

Unit – I: Fundamentals of PHP

Web server – Apache - PHP Intro- PHP Install -PHP Syntax -PHP Variables-PHP Echo / Print -PHP Data Types- PHP Strings -PHP ConstantsPHP Operators- Control structures - PHP Functions - Directory Functions - File System Functions

-PHP ArraysPHP Sorting ArraysPHP Super global - String Functions - Date and Time Functions- Mathematical Functions - Miscellaneous Functions.

Unit – II: PHP Forms

Basic Form Processing (GET and POST Method) - PHP Form Handling - PHP Form Validation- PHP Form Required– URL - E-mail- PHP Form Complete.

Unit - III: PHP Advanced

PHP Arrays Multi-PHP Date and Time- PHP Include-PHP File Handling-PHP File Open/Read- PHP File Create/Write- PHP File Upload-PHP Cookies- PHP Sessions-PHP Filters- PHP Filters Advanced-PHP Error Handling- PHP Exception-COM-DOM - CURL-SOAP.

Unit – IV: PHP with MySQL Database

PHP MySQL Functions -Connect- Create DB -Create Table- Insert Data- Get Last ID- Insert Multiple-Prepared-Select Data- Delete Data- Update Data- LimitData -Table join - Database driven application.

Unit - V: PHP - XML

PHP XML Parsers - PHP Simple XML Parser- PHP Simple XML - GetPHP XML ExpatPHP XML DOM.

3. Teaching Resources

Text Book

1. Julie C.Meloni, Sams "Teach yourself PHP, MySQL and Apache",Fourth edition, 2008 by Sams Publishing.

    Unit - I   **:** Ch. 3 – 8, 10

    Unit - II   **:** Ch. 11

    Unit - III   **:** Ch. 12-13

    Unit - IV   **:** Ch. 16

    Unit - V   **:** Ch. 28

References

1. Nowicki, et al. "Professional PHP", Wrox Press, 2000.

Web References

  (i) Online Tutorial
  1. www.w3schools.com
  2. www.php.net
  3. www.phpclasses.org

4. Learning Outcome

Upon completion of this course, students should be able to:

- Understand process of executing a PHP-based Script on a webserver.
- Understand basic PHP syntax for variables use and standard language constructs, such as conditional and loops.
- Storing data in arrays.
- Using PHP built-in functions and creating custom functions
- Understanding POST and GET in form submission.
- How to receive and process form submission data.
- Reading and writing cookies.
- Create a database in phpMyAdmin Read and process data in a MySQL datb

[SEMESTER V]   **[0-0-2-2:40:60]**

[SEMESTER V]   **[0-0-2-1:40:60]**

<mark>PCS514 - PRACTICAL - VII: PROGRAMMING WITH PHP</mark>

1. Data Types and Operators

2. Control Statements and Looping

3. Functions

4. Arrays

5. Form Processing (GET & POST)

6. Validation

7. File Uploading and Downloading

8. Cookies

9. Forms and Databases

10. XMLs

CS628 - WEB DEVELOPMENT USING XML

1. **Learning Objectives**

   - To know how to represent data over the Web using XML.
   - Understanding of the XML Document Object Model.
   - Understanding XML DTD and its uses.
   - Understanding XML schema and its uses.
   - Understanding JSON and its uses.

2. **Blue Print of the Question Paper**

Section	I-Unit	II-Unit	III-Unit	IV-Unit	V-Unit
Section -A	1-2	3-4	5-6	7-8	9-10
Section -B	11(a).Theory (OR) (b) Program	12(a).Theory (OR) (b) Theory	13(a).Program (OR) (b) Theory	14 (a).Theory (OR) (b) Program	15(a).Theory (OR) (b) Theory
Section -C	16.Theory	17.Theory (OR) Program	18.Program	19.Theory	20.Theory

3. **Course Outline**

Unit - I: Fundamentals of XML

SGML - The Beginnings of XML – Benefits of XML - Advantages of XML over SGML, HTML, Databases and Flat Files - Drawbacks of XML. XML Syntax - Document Structure - Declaration - Markup and Content - Elements - Attributes - Entities - Comments - Processing Instructions - Rules of XML Structure – Well Formed and Valid Documents - Applying CSS Style to XML.

Unit - II: Validating XML with the DTD

Document Type Definitions -Some Simple DTD Examples - Structure of a Document - Type Definition - DTD Attributes - DTD Entities - DTD Directives - DTD Drawbacks and Alternatives

Unit – III: XML Schema

Schema Recommendation - Document - Schema for XML Document - Creating XML Schemas - Declaring Attributes - Declaring Elements - Declaring Complex Elements - Declaring Simple Types - Refining Simple Types Using Facets - Anonymous Type Declarations - Specifying Mixed Content for Elements - Annotating Schemas - Model Groups - Attribute Groups - Targeting Namespaces

- "Inheriting" from Other Schemas.

Unit – IV: X-path, X-link and XML for the Web

XPath - Operators and Special Characters - XPath Syntax – Axes – Predicate – XPath Function. XPointer - Points - Ranges - Abbreviating XPointer Notation - XLink - Simple Links - Extended Links. **JSON**: JSON Introduction - JSON Syntax - JSON Data types - JSON Objects - JSON Schemas - JSON Comparison with XML.

Unit - V: XML DOM

Concept of DOM – Features of DOM - Disadvantages of Using DOM - DOM Levels - DOM Core: Parents, Children, and Siblings - DOM Interfaces - Java Bindings - Walking Through an XML Document - Creating an XML Document - DOM Traversal and Range: Traversal - Range.

4. **Teaching Resources**

    Text Book

    1. Ron schmelzer. et al. "XML and Web Services Unleashed". SamsPublishing, 2002.

        Unit – I   **:** Ch. 1 & 2

        Unit – II   **:** Ch. 3

        Unit – III   **:** Ch. 4

        Unit – IV   **:** Ch. 5

        Unit – V   **:** Ch. 7

Reference

1. David Chappell and Tyler Jewell. "Java Web Services", 1st Edition,O'Reilly, 2002.

Web References

(i) **Online Tutorial**

1. http://www.w3schools.com/xml/
2. http://www.scribd.com/doc/29110068/XML-and-Web-Services
3. http://msdn.microsoft.com/en-us/library/ms996507.aspx

(ii) **Online Quiz**

1. http://www.indiabix.com/online-test/
2. http://www.pskills.org/xml.jsp

(iii) **Online Compiler**

1. http://www.tutorialspoint.com/online_xml_editor.htm

5. **Learning Outcome**

Upon completion of this course, students should be able to:

- Describe how namespaces are used in XML.
- Follow XML syntax rules.
- Validate XML using DTD.
- Construct XSLT style sheets for transforming HTML.
- Construct XPath expressions for use within XSLT style sheet templates.
- Be able to write the schema for the given XML documents in both DTDand XML Schema languages.
- Be able to parse XML documents by using DOM.

Access and work with the Android file system.

- Create an application that uses multimedia under the Android operating system.
- Access and work with database under the Android operating system.

[SEMESTER VI]   **[5-0-0-5:30:70]**

2. **Learning Objectives**

Upon completion of this course, students should be able to:

- Develop a mobile application.
- Understand the concept of SQLite.

3. **Course Outline**

Unit - I: Introducing Android

Introduction – History – Versions – Features – Understanding the Android market

- Android software stack – Life cycle of an Android – The layers of Android – The Intent of Android development – Four kinds of Android components – Understanding the AndroidManifest.xml file – Mapping applications to processes

– Android development environment – Introducing the Android SDK – Exploring the development environment – Building an Android application in Eclipse - Creating an Android Hello World Application – Using the Android emulator – Debugging your application.

Unit - II: Building Basic User Interfaces and Using Controls

User Interfaces – Understanding Android's Common Controls – Adapters and List Controls – Understanding Layout Managers – Working with Menus and Action Bars - Working with views – Intents and Services – Toast.

Unit - III: Android Applications

Telephony – Exploring telephony background and terms – Accessing telephony information – Interacting with the phone – Working with messaging: SMS – Notifications and alarms – Introducing Toast – Placing your Toast message – Making custom Toast view – Introducing notifications – Making a custom notification view – Introducing alarms – Graphics and animation – Drawinggraphics in Android – Creating animations with Android`s Graphics API – Multimedia – Introducing to Multimedia and Stagefright – Playing audio – Playing video – Capturing media.

Unit - IV: The Maturing Platform

Location – Simulating your location within the emulator – Using LocationManager and LocationProvider – Working with Maps – Converting places and addresses with Geocoder – Bluetooth and sensors – Exploring Android's Bluetooth capabilities – Interacting with the SensorManager – AppWidgets – Drag and Drop – The drag-and-drop classes – Drag-and-drop operations – The shadow builder – Drag events – Starting drag operations – Listening for drag-and-drop events – Responding to drag-start operations – Handling drop operations.

Unit - V: Database Operations

Storing and retrieving data – Creating a SQLite Database – Migrating a Database

– SQLite DB: CRUD Operations. Publishing Android Application: Exportandroid application – Google play store registration.

4. Teaching Resources

    Text Book

1. W. Frank Ableson, Robi Sen, Chris King, C. Enrique Ortiz, **"Android in Action",** Third Edition 2012.

2. Dave Maclean, Satya Komatineni, Grant Allen, **"Pro Android5",**Apress Edition 2015.

    Reference

1. Dave Smith and Jeff Friesen, "Android Recipes: A Problem –Solution Approach", Rakmo Press (P) Ltd, New Delhi, 2011.

    Web Reference

1. Android Developer's Guides - available at http://developer.android.com/

5. Learning Outcome

Upon completion of this course, students should be able to:

- Describe the platforms upon which the Android operating System willrun.
- Create a simple application that runs under the Android operatingsystem.

CS630 - PROGRAMMING WITH R

1. Learning Objectives

Upon completion of this course, students should be able to:

- Understand the fundamentals of R and able to use Basic Programming Concepts.
- Understand the concepts of vectors and performing operations on Complex Data Types.
- Understand the various R functions and strings, concepts of data frame and reshaping in R Programming.
- Become more popular in charts and graphs and to understand the Mean, Median and Mode in R statistics.

2. Blue Print of the Question Paper

Section	I-Unit	II-Unit	III-Unit	IV-Unit	V-Unit
Section-A	1-2	3-4	5-6	7-8	9-10
Section-B	11. Theory(OR) Theory	12. Theory (OR) Theory	13. Theory (OR) Program	14. Theory (OR) Theory	15. Theory (OR) Theory
Section-C	16. Theory(OR) Theory	17. Theory (OR) Theory	18. Theory (OR) Program	19. Theory (OR) Program	20. Theory (OR) Program

3. **Course Outline**

Unit – I: Data types, Operators and Structures.

Overview – (Evolution of R, Features of R) – R Environment Setup – Basic Syntax of Basic Data Types (Vectors, Lists, Matrices, Arrays, Factors and Data Frames) – R Variables (Declaration, Data Type of a Variable, Finding and Deleting a Variable) – Operators (Types of Operators, Arithmetic Operators, Relational Operators, Logical Operators, Assignment Operators) – Decision Making (if Statement, if…Else Statement, Switch Statement) - loops (Repeat Loop, While Loop, For Loop, Control Statement, Break Statement, Next Statement).

Unit – II: Functions, Strings and Vectors

Function – Function Definition – Function Components – Built-in Function – User Defined Function – Calling a Function – Lazy Evaluation of Function – Strings – String construction – String Manipulation - Vectors –Vector Creation- Accessing Vector Elements – Vector Manipulation - Lists – Creating a List – Naming List Elements – Accessing List Elements – Manipulating List Elements –Merging Lists – Converting List to Vectors.

Unit – III: Matrices, Array, Factors and Data Frames

Matrices – Accessing Elements of a Matrix – Matrix Computations - Arrays – Accessing Array Elements – Manipulating Array Elements- Calculating Across Array Element - and Factors – Factors in Data Frame – Changing the order of Levels – Generating Data Frames – Packages – Data Reshaping – CSV Files – Excel File – Data Bases.

Unit – IV: Databases and Charts

Data Bases – Connecting R to MySQL – Querying the Table – Updating Rows in the Table – Inserting Data into Table – Creating Tables in MySQL – Dropping Tables - Pie Charts – Pie Chart Title and Colors, Slice Percentages and Chart Legend, 3D Pie Chart – Bar Charts – Bar Chart Label, Title Colors, Group Bar chart and Stacked Bar Chart – Boxplots – Creating the Boxplot – Histograms.

Unit – V: Graphs and Statistics

Graphs - Line Graphs – Line Chart Title, Color and Labels, Multiple Lines in a Line Chart– Scatterplots – Creating Scatter Plots – Scatter Plot Matrices - Statistics - Mean – Applying Trim and NA options – Median – Mode.

4. **Teaching Resources**
   Text Book

   Unit I, II and III.

   1. Norman Matloff. "Art of R Programming: Tour of Statistical Software Design", Safari books online Publisher, No StarchPress.2011

   Unit IV and V.

   2. Robert Gentleman and Ross Ihaka, "R Programming", TutorialsPoint (I) Pvt. Ltd, 2016.

   References
   1. OzgurErgul. "Guide to Programming and Algorithms using R". Springer Verlag London 2013.
   2. Mark Gardener. "Beginning R: The Statistical Programming Language". Wrox Publication, 2012
   3. Pierre Lafaye de Micheaux _ R´emy Drouilhet Benoit Liquet. "The R Software Fundamentals of Programming", Springer New York Heidelberg Dordrecht London, 2013.
   4. Andrie De Vries and Joris Meys. "R Programming for Dummies", Wiley India Private Limited; 1st Edition, 2012

   Web References
   (i) **Online Tutorial**
      1. www.r-tutor.com/
      2. https://www.rstudio.com/online-learning/
      3. https://CRAN.R-project.org/
      4. http://www.omegahat.net/
      5. http://www.rseek.org
      6. http://www.tutorialspoint.com/r/

   (ii) **Online Quiz**
      1. www.sanfoundry.com/r-programming-quiz/

5. Learning Outcome

Upon completion of this course, students should be able to:

- Master the use of the R interactive environment
- Expand R by installing R packages
- Read Structured Data into R from various sources
- Understand the different data types and data structures in R
- Understand how to use dates in R
- Use R for mathematical operations, user-defined R functions
- Use control statements, loop constructs in R, Manipulate strings in R
- Understand the statistical methods.

PCS624 - PRACTICAL - IX: WEB DEVELOPMENT USING XML

1. XML Document Structure

2. Rules of XML Structure

3. XML with XSLT/CSS

4. Namespaces in XML

5. Creating XML Schemas

6. XPath

7. XPointer

8. XLink

9. XHTML

10. XFORMS

PCS625 - PRACTICAL - X: PROGRAMMING WITH R

1. Control Structures.

2. Functions

3. Strings.

4. Vectors

5. Matrices

6. Arrays

7. Data Frames and Factors

8. Charts and Graphs

9. Database

10. Statistical Functions

9. REGULATIONS FOR THEORY COURSES

(i) Evaluation Scheme for Continuous Assessment

Two Written Tests   15 Marks

Attendance   05 Marks

Assignment / Moodle Test	04 Marks
Open Book Test / Problem Solving	02 Marks
Other Components	04 Marks
Total	30 Marks

Other components (Seminars, Library reference works, Group Discussions, Field Visits and Quiz).

(ii) There is no passing minimum for CA.

10. REGULATIONS FOR PRACTICAL COURSES

Each practical course will have a maximum of 100 marks.

(i) For a practical course, Continuous Assessment is 40 marks and Semester Examination is 60 marks.

(ii) The features of every programming language are alone listed in the syllabus, however the students are expected to carry out several exercises in each feature of the programming language.

(iii) Continuous Assessment (CA)

a. Attendance	:	05 marks.
b. Performance in the practical session	:	10 marks.
c. CA Test	:	15 marks.
d. Application Development	:	10 marks. Total : 40 Marks

b. Performance in the practical session

Every practical session will carry a maximum of 10 marks and it is divided as follows:

(a) Initial Preparation & Observation :   5 marks.
(b) Debugging & Execution of Program   :   5 marks.

The students must prepare for the practical exercises by writing programs in the observation notebook. The observation notebook should be submitted for evaluation. Marks will be deducted for late as well as incomplete or incorrect submission.

Ten marks will be awarded for each exercise subject to the successful completion of the entire exercise as directed by the staff concerned.

c. CA Test

For each practical paper, only one CA test will be conducted for a maximum of 15 marks.

d. Developing an application

A student has to develop an application in the respective programming language. The student has to construct the application outside the class hours using his own resources. The student has to demonstrate the application in front of the class students at the time fixed by the Practical in-charge.

a) Application Development - 5 Marks
b) Presentation   - 3 Marks
c) Viva Voce   - 2 Marks

(iv) There is no passing minimum for CA.

Semester Examination (SE)

The duration of practical examination is three hours. The student should submit a bonafide record of the experiments done at the time of the semester examination. The student shall not be allowed to appear for the semester examination without the bonafide record.

The bonafide record should contain a certificate, program list and sourcecode listing of all the programs with outputs.

Semester Examination will be conducted for 60 marks and the marks are divided as follows:

        (a) Programming   :   50 Marks
        (b) Record   :   10 Marks

If a student fails in a semester examinations he/she has to reappear for the next semester practical examination. However the student need to resubmit the record work for evaluation.

11. QUESTION PATTERN FOR THEORY EXAMINATIONS

(i) Question Paper Pattern for Continuous Assessment Tests

Time: 2 Hrs.   Max Marks: 75

The Question Paper shall consist of three sections Part – A (6 x 3 =18)

        Answer all Questions.

Part – B (3 x 9 =27)   3 Questions with internal choice (either or type) Part – C (2 x 15 =30)

        Answer any two questions out of 3 questions.

(ii) Question Paper Pattern for Semester Theory Examination

Time: 3 Hrs.   Max Marks: 70

The Question Paper shall consist of three sections

Part - A (10 x 2 = 20) Answer all Questions. Two questions from each unit.

Section	Description Type and Choice	Marks	Number of Questions from					Total Questions in each Section
			Unit I	Unit II	Unit III	Unit IV	Unit V	
A	Short Answer Questions **NO CHOICE**	Each Question Carries 2 Marks	2	2	2	2	2	10
B	Medium Answer Questions **EITHER OR TYPE**	Each Question Carries 4 Marks	1 Pair	1 Pair	1 Pair	1 Pair	1 Pair	5 Pairs
C	Long Answer Questions **ANY THREE**	Each Question Carries 10 Marks	1	1	1	1	1	5
Total Number of Questions			4	4	4	4	4	20

Part - B (5 x 4 = 20) 5 Questions with internal choice (either or type).One question from each unit.

Part - C (3 x10 = 30) Answer any three questions out of 5 questions. One question from each unit.

(iii) Blue Print of Theory Courses for Semester Examination

12.QUESTION PATTERN FOR PRACTICAL EXAMINATION

Time: 3 Hrs   Max. Marks: 50+10(60 for Record)

The question paper pattern for continuous assessment test is same as that the semester practical examination.

Each student will get a single question to be answered. The question may have subdivisions.

No more than three candidates should get the same question in a batch of 30 students. Hence a question paper in practical should have 10 questions.

Blue Print of Practical Courses for the continuous Assessment tests and Semester Practical examination

Section	Description Type and Choice	Marks	Total Questions in each Section
A	Programming Questions **EITHER OR TYPE**	Each Question Carries 25 Marks	1 Pair
B	Programming Questions **EITHER OR TYPE**	Each Question Carries 25 Marks	1 Pair
Total Number of Questions			2 Pair

In each section one question will be asked from the list of exercise completed in the practical. Another question will be a general question covering the features of the programming language.

[SEMESTER V]   **[0-0-0-1:100:0]**

INDUSTRIAL PLANT TRAINING (IPT)

Regulations

1. Students need to undergo an industrial training during the summer vacation after the completion of the second year.
2. The duration of the training programme can be four weeks, ie 30 working days, either continuously or in 2 spells of 15 working days.
3. Requisition for a bonafide certificate can be arranged through a coordinator designated by the department for the IPT course.
4. On applying for industrial training the student has to submit Review Forms along with industrial training Acceptance letter from the respective company to the dept industrial training Coordinator.
5. On completion of the training the student has to submit a report at the time fixed by the department.
6. The report will be evaluated by a Committee of two internal faculty members.
7. The student has to make an oral presentation for about 30 minutes including question and answer session.
8. There is no external examination.
9. Viva-Vice will be conducted along with the semester practical examinations.

Evaluation

Evaluation of the IPT Report   -   80 Marks

Viva-Voce   -   20 Marks

Total   -   100 Marks

QUANTITATIVE APTITUDE

1. **Course Outline**

    Unit - I:

    Averages – Problems on numbers – Problems on Ages – Percentages – Profitand Loss.

    Unit - II:

    Ratio and Proportion – Partnership – Time and Work – Pipes and Distances –Time and distance

    Unit - III:

    Problems on Trains – Boats and Streams – Allegation – Simple Interest –Compound Interest

    Unit - IV:

    Calendar – Clocks – Permutation – Combination – Probability

    Unit - V:

    Direction sense test – Mathematical Operations – Logic – Problems on cubes

    – Problems on dice

2. **Teaching Resources**

    Text Book

    1. R.S.Aggarwal, "Quantitative Aptitude for Competitive Examinations", 7th Revised Edition, S.Chand and Co. Ltd, New Delhi, 2005
    2. R.S.Aggarwal, "Verbal and Non Verbal Resanoning", S.Chand and Co. Ltd, New Delhi.

    Reference

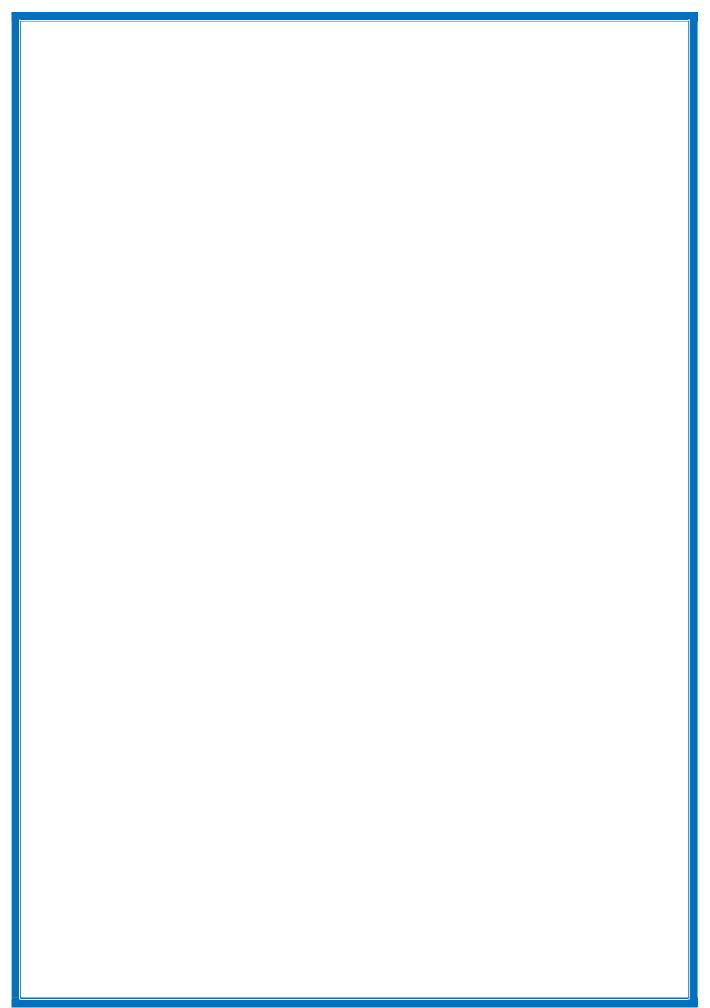   1. Barron's Guide for GMAT, Galgotia Publications, New Delhi, 2006

    Web References

    1. http://www.careerbless.com/aptitude/qa/home.php
    2. http://www.indiabix.com/aptitude/questions-and-answers/

3. http://www.careersvalley.com/solved-placement-papers/company/wipro
4. http://www.indiabix.com/placement-papers/tcs/2608
5. http://www.careersvalley.com/tcs-solved-papers-quantitative-aptitude-i

Evaluation

Online Objective Type CA test 1	20 Marks
Online Objective Type CA test 2	20 Marks
Problem Solving	20 Marks
Online Objective Type Final Test	40 Marks
Total	**100 Marks**