

RAJAH SERFOJI GOVT. COLLEGE (AUTONOMOUS)
THANJAVUR -613005

Course structure for B.Sc.,(Computer Science)
(Applicable to the candidates admitted from the academic year 2015-2016 onwards)

PART	CODE	COURSE	TITLE	HRS	MARKS		TOTAL	CRED IT
					IE	WE		
			SEMESTER I					
I	RR1T1	LT	PART I Tamil – I	6	25	75	100	3
II	RR1E1	LE	PART-II English –I	6	25	75	100	3
III	RR1CS1	CC1	Fundamentals of Information Technology	6	25	75	100	5
III	RR1CSP1	CC2	Major practical-I (Ms-office and HTML lab)	3	40	60	100	5
III	RR1ACSM1	Allied 1	Allied Mathematics I	4	25	75	100	4
III	RR2ACSM3	Allied 3	Allied Mathematics III	3	-	-	-	-
Iv	RR1VE	VE	Value Education	2	25	75	100	2
			TOTAL	30	165	435	600	22
			SEMESTER II					
I	RR2T2	LT	PART I Tamil – II	6	25	75	100	3
II	RR2E2	LE	PART II English - II	6	25	75	100	3
III	RR2CS2	CC3	C and Data structure	6	25	75	100	5
III	RR2CSP2	CC4	Major practical-I (C lab)	3	40	60	100	5
III	RR2ACSM2	Allied 2	Allied Mathematics II	4	25	75	100	4
III	RR2ACSM3	Allied 3	Allied Mathematics III	3	25	75	100	4
IV	RR2ES	ES	Environmental studies	2	25	75	100	2
			TOTAL	30	190	510	700	26

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PART	CODE	COURSE	TITLE	HRS	MARKS		TOTAL	CREDIT
					IE	WE		
			SEMESTER III					
I	RR3T3	LT	PART I Tamil – III	6	25	75	100	3
II	RR3E3	LE	PART-II English –III	6	25	75	100	3
III	RR3CS3	CC5	Java programming	6	25	75	100	5
III	RR3CSP3	CC6	Major practical-III (Java programming lab)	3	40	60	100	5
III	RR3ACSP1	Allied 4	Applied Physics I	4	25	75	100	4
III	RR4ACSP	Allied 6	Applied Physics Practical	3	-	-	-	-
IV	RR3SB1	SB1	Skill Based - 1	2	25	75	100	2
			TOTAL	30	165	435	600	22
			SEMESTER IV					
I	RR4T4	LT	PART I Tamil – IV	6	25	75	100	3
II	RR4E4	LE	PART II English - IV	6	25	75	100	3
III	RR4CS4	CC7	Visual Basic .Net	6	25	75	100	5
III	RR4CSP4	CC8	Major practical IV (Visual Basic .Net Lab)	3	40	60	100	5
III	RR4ACSP2	Allied 5	Applied Physics II	4	25	75	100	4
III	RR4ACSP	Allied 6	Applied Physics Practical	3	25	75	100	4
IV	RR4SB2	SB2	Skill Based - 2	2	25	75	100	2
			TOTAL	30	190	510	700	26

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PART	CODE	COURSE	TITLE	HRS	MARKS		TOTAL	CRED IT
					IE	WE		
			SEMESTER V					
III	RR5CS5	CC9	Data Base Systems	6	25	75	100	4
III	RR5CSP5	CC10	Major Practical –V (RDBMS Lab)	6	40	60	100	4
III	RR5CSEL1	MEC1	Computer Architecture	6	25	75	100	4
III	RR5CSEL2	MEC2	Software Engineering	6	25	75	100	4
III	RR5BCELO1	NMEC1	Nutrition & Health Sciences	4	25	75	100	4
IV	RR5SB3	SB3	Skill Based - 3	2	25	75	100	2
			TOTAL	30	165	435	600	22
			SEMESTER VI					
III	RR6CS6	CC11	Microprocessor & its Applications	6	25	75	100	4
III	RR6CS7	CC13	Operating system	6	25	75	100	4
III	RR6CSP6	CC12	Major Practical –VI (Microprocessor Lab)	6	40	60	100	4
III	RR6CSEL3	MEC3	Computer Networks	6	25	75	100	4
III	RR6SELO2	NMEC2	Statistical Data Analysis	4	25	75	100	4
V	RR6GS	GS	Gender Studies	2	25	75	100	1
V		EXT. ACTV.	NSS/NCC/SPORTS/RED CROSS	-	-	-	-	1
			TOTAL	30	165	435	600	22
			GRAND TOTAL				3800	140

Papers			Total Credit	
PART I	TAMIL	4x3	12	
PART II	ENGLISH	4X3	12	
PART III	CORE	8X5=40 5X4=20	60	
		ELECTIVES	3X4	12
	ALLIED	6X4	24	
	NON-MAJOR	2X4	8	
PART IV	ES,VE	2X2	4	
	SKILL BASED	3X2	6	
PART V	GS	1X1	1	
	EXT. ACTIVITIES		1	
TOTAL PAPERS		38	TOTAL CREDIT	140

RAJAH SERFOJI GOVT. COLLEGE (AUTONOMOUS)
THANJAVUR -613005

Credits : 5
Hours/Week : 6
Medium of instruction: English

Code: RR1CS1

B.Sc(Computer Science) - Semester: 1
(For students admitted from 2015-2016 onwards)

FUNDAMENTALS OF INFORMATION TECHNOLOGY

UNIT-I

Introduction to computers: Definition - Characteristics of computers- Uses of computers - Five Generations of Computers - classification of computers- – Anatomy of a digital computer. **Central Processing Unit (CPU) and Memory:** Introduction - Central processing Unit (CPU)-Memory- RAM, ROM, Registers.

UNIT-II

Input Devices: Keyboard- Mouse- Trackball- Game Controllers- Scanners- Barcode Reader- Card Reader- Digitizer - Voice Recognition – Webcams - Digital Cameras- Video Cameras- OCR- OMR- ICR- MICR. **Output devices:** Introduction – monitor – printer- plotter.

UNIT-III

Secondary storage devices: classification advanced ages - magnetic tape – magnetic disk- optical disk - **Programming Languages:** Machine assembly and high level languages- types of high level languages - **Introduction to computer software:** Introduction- computer software- Hardware/software interaction- classification of software- operating system- utilities- compilers and interpreters- word processors – Spreadsheets- presentation software- image processors.

UNIT-IV

Internet & World Wide Web: Introduction, internet access – internet basic – internet protocol- internet addressing- World wide web (www). **Overview of Electronic mail:-** Introduction- How E-mail works? – Why use e-mail- e-mail- name and addresses- mailing basics.

UNIT-V

HTML: History - generations- documents – header section- title- prologue-links- heading printing- aligning the headings- horizontal rule- paragraph- tab setting- images and picture – ordered and unordered lists- table handling.

Text Book:

1. Fundamentals of Information Technology- 2ND Edition, Alexix Leon and Mathews Leon , Leon Vikas publishing House Pvt Ltd, Chennai (Unit I to IV)
2. World Wide Web design with HTML, C. Xavier, TMH,2000(Unit - V)

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Unit I: Chapter 1,2,3, 4,7

Unit II: Chapter 9,10

Unit III: Chapter 8,13,11

Unit IV: Chapter 24, 25

Unit V: Chapter 4,5,6,7,8

Question Paper pattern

Maximum Marks: 75

Exam Duration: Three Hours

Part A 10x2 = 20 Answer All Question (Two questions from each unit)

Part B 5x5 = 25 Answer All questions (Either or Type – Two questions from each unit)

Part C 3 x10 30 Answer any THREE questions (One question from each unit)

Signature of the HOD

COE

**RAJAH SERFOJI GOVT. COLLEGE (AUTONOMOUS)
THANJAVUR -613005**

Credits : 5
Hours/Week : 3
Medium of instruction: English

Code: RR1CSP1

B.Sc (Computer Science) - Semester: 1
(For students admitted from 2015-2016 onwards)

MS-OFFICE AND HTML LAB

MS-OFFICE

1. Create your Bio-Data in MS-Word.
2. Create a report using bullets, numbers, header, footer and table in MS-Word.
3. Create a Circular Using in Mail – Merge
4. Prepare a Mark Sheet in MS-Excel
5. Create a Bar Chart in Ms-Excel
6. Create a pay bill of a company employees in MS-Excel
7. Prepare a slide about computers
8. Prepare a slide show about different courses of your college.

HTML

9. Develop a HTML document align heading and paragraph to the left , right and center.
10. Develop the HTML Document to display your College name using Horizontal Rule(Size, width ,alignment)
11. To create a invitation of your department seminar using Tab setting.
12. To create a HTML Document to Insert a Images and Desired thickness of border.
13. To create a HTML document to display your college name and department's using unordered list.
14. Develop the HTML document to create a Time table of your class using tables.

Signature of the HOD

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RAJAH SERFOJI GOVT. COLLEGE (AUTONOMOUS)
THANJAVUR -613005

Credits : 5
Hours/Week : 6
Medium of instruction: English

Code: RR2CS2

B.Sc (Computer Science) - Semester: 2
(For students admitted from 2015-2016 onwards)

C AND DATA STRUCTURE

UNIT-I

Overview of C: History of C – Importance of C – Constants, Variables and Data Types: Introduction- character set- C Tokens- Keywords and identifiers- Constants- Variables-Data types- Declaration of variables- Declaration of storage class - Operators and Expressions.

UNIT-II

Managing Input and Output Operations: Introduction – Reading a character, writing a character-formatted input and output - Decision Making and Branching: Decision making with IF statement – simple If statement- The If...Else statement- Nesting of IF.. Else statement- The else if ladder-The switch statement – the?: spectator-The GOTO statement- Decision Making and looping: WHILE, DO and FOR statement.

UNIT-III

Arrays: one-dimensional arrays- declaration for one-dimensional arrays- Declaration of one-dimensional arrays- initialization of one dimensional arrays – two-dimensional arrays- initialization of two dimensional arrays-multi-dimensional arrays- User-defined Functions: Need for user defined functions – A multi function program – Elements of user defined functions- definition of functions- return value and their types- function calls and declaration.

UNIT-IV

Structures and Unions: Introduction- defining a structure – declaring structure variables- accessing structure members- structure initialization – Pointers: accessing the address of a variable- declaring pointer variables – File Management: Defining and opening a file- closing a file- I/O operations on file.

UNIT-V

Data Structures: Introduction – Overview – Arrays – Axiomatization – Ordered Lists. Stacks and Queues: Fundamentals – Evaluation of Expressions. Internal Sorting: Searching – Insertion Sort – Quick Sort – Merge Sort.

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Text Books:

1. Programming in ANSI C – E.Balagurusamy - 4th Edition – Tate McGraw-Hill. (For I, II, III and IV units)
2. Fundamentals of Data Structures – Ellis Horowitz, Sartaj Sahni – Galgotia BookSource 4th Edition. (For V unit)

(Unit I : Chapter 1.1, 1.2, 2.1 to 2.9, 3.1 - 3.12

Unit II: Chapter 4, 5, 6.1-6.5

Unit III: Chapter 7.1 -7.7, 9.1 - 9.8

Unit IV: Chapter 10.1 -10.4, 11.3 - 11.4, 12.2 -12.4

Unit V: Chapter 1.1, 2.1, 2.2, 3.1, 3.3, 7.1, 7.2, 7.3, 7.5)

Reference Books:

1. “Programming with C – Byron S Gottfried” – Schaum’s Outline Series, Tata McGraw-Hill, 1996.
2. “Data Structures” – Lipschuta, Tata McGrawHill, 2007.

Question Paper pattern

Maximum Marks: 75

Exam Duration: Three Hours

Part A 10x2 = 20 Answer All Question (Two questions from each unit)

Part B 5x5 = 25 Answer All questions (Either or Type – Two questions from each unit)

Part C 3 x10=30 Answer any THREE questions (One question from each unit)

Signature of the HOD

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RAJAH SERFOJI GOVT. COLLEGE (AUTONOMOUS)
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Credits : 5
Hours/Week : 3
Medium of instruction: English

Code: RR2CSP2

B.Sc (Computer Science) - Semester: 2
(For students admitted from 2015-2016 onwards)

PROGRAMMING IN C AND DATA STRUCTURE LAB

1. Write a C Program to find the solution of a Quadratic Equation for all cases.
2. Write a C program to generate prime numbers from 1 to n.
3. Develop a C program to generate factorial and Fibonacci numbers using recursive function.
4. Write a program to perform various string operations (String length, String Copy and Palindrome checking)
5. Develop a program to perform matrix addition and subtraction operations using user-defined functions.
6. Write a program to find the minimum and maximum number in set of values.
7. Develop a program to perform matrix multiplication operations using user-defined functions.
8. Create a file 'Student' contain information for n number of student with roll no, name, marks in five subject. Calculate total, average for this n number of students.
9. Create a file 'Pay roll' contain information for n number of employee empno, empname, designation, Basic pay. Calculate HRA, DA, PF and show the Gross and Net salary.
10. Write a program to implement Stack and its operations.
11. Write a program to perform Queue and its operations.
12. Write a C program to print the numbers in ascending order using Insertion Sort

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RAJAH SERFOJI GOVT. COLLEGE (AUTONOMOUS)
THANJAVUR -613005

Credits : 5
Hours/Week : 6
Medium of instruction: English

Code: RR3CS3

B.Sc(Computer Science) - Semester: 3
(For students admitted from 2015-2016 onwards)

JAVA PROGRAMMING

Unit-I

Fundamentals of Object Oriented Programming: Introduction – Object oriented paradigm – OOP Concepts - Benefits and Applications of OOP. Overview of Java Language: Java Program Structure – Implementing a Java Program – Java virtual Machine – Constants, Variables and Data types - Operators and expressions – Decision making and branching - Decision making and looping.

Unit-II

Classes, Objects and Methods : Introduction – Defining a Class – Field and Method declaration – Creating Objects – Accessing Class Members – Constructors – Method Overloading – Static Members – Inheritance – Overriding Methods – Final Variables and Methods – Final Classes – Finalizer Method - Arrays, Strings and Vectors.

Unit-III

Interfaces: Multiple Inheritances - Defining, Extending, Implementing and Accessing Interfaces. Packages: Introduction – Java API Packages - Using System Packages – Naming Conventions - Creating, Accessing and using a Package. Multithreaded Programming: Creating Thread – Life cycle of a Thread – Using Thread methods – Thread Exceptions – Thread Priority.

Unit IV

Managing Errors and Exceptions: Type of Errors - Syntax of Exception Handling Code – Multiple Catch Statements – Throwing our own Exceptions. Managing Input / Output files in Java: Concept of Stream – Stream Classes – Using the File Class.

Unit V

Graphics Programming: The Graphics Class - Applet Programming: Introduction – Building Applet Code - Applet Life Cycle – Designing Web Page – Applet Tag – Passing Parameters to Applet.

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Text Book

Programming with Java – E.Balagurusamy, Tata McGraw Hill, and 4th Edition.

(Unit I: Chapter 1, 3.5, 3.9, 3.10, 4, 5, 6, 7)

Unit II: Chapter 8.1 to 8.9, 8.11 to 8.15, 9

Unit III: Chapter 10, 11.1 to 11.7, 12.2, 12.5, 12.6, 12.7, 12.8

Unit IV: Chapter 13.2, 13.4, 13.5, 13.7, 16.2, 16.3, 16.8

Unit V: Chapter 15.2, 14.1, 14.4, 14.5, 14.7, 14.8, 14.12)

Reference Book

The Complete Reference Java, Herbert Schildt, Tata McGraw Hill, 4th Edition.

Question Paper pattern

Maximum Marks: 75

Exam Duration: Three Hours

Part A 10x2 = 20 Answer All Question (Two questions from each unit)

Part B 5x5 = 25 Answer All questions (Either or Type – Two questions from each unit)

Part C 3 x10 30 Answer any THREE questions (One question from each unit)

Signature of the HOD

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RAJAH SERFOJI GOVT. COLLEGE (AUTONOMOUS)
THANJAVUR -613005

Credits : 5

Code: RR3CSP3

Hours/Week : 3

Medium of instruction: English

B.Sc(Computer Science) - Semester: 3
(For students admitted from 2015-2016 onwards)

JAVA PROGRAMMING LAB

1. Write a Java Program to print all prime numbers from 1 to n.
2. Develop a Java Program to manipulate String operations.
3. Write a program to implement multiple inheritance concepts in Java.
4. Write a program to implement polymorphism concepts in Java.
5. Write a program to justify the importance of interface concept.
6. Develop different level of Packages and import them in required program.
7. Write a program to count and display the no of characters, words and lines of the given text file.
8. Write a program to create threads and assign priorities to them
9. Write a program to create a window with 3 check boxes called Red, Blue and Green. The applet should change the colour according to the selection
10. Write a program to copy the contents from source file to destination file.
11. Develop an applet program to draw lines, rectangle, oval and string using Graphics class.
12. Develop an applet program for animation using Multithreading.

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RAJAH SERFOJI GOVT. COLLEGE (AUTONOMOUS)
THANJAVUR -613005

Credits : 5

Code: RR4CS4

Hours/Week : 6

Medium of instruction: English

B.Sc(Computer Science) - Semester: 4
(For students admitted from 2015-2016 onwards)

VISUAL BASIC .NET

Unit I

Introduction – Start Page – IDE main window- Class view window-Object browser – Code window – Intelligence- Compiling the code – Code Debugging- Developing a simple VB.NET console application – Developing simple VB.NET project through visual studio IDE

Unit II

Variables Constants and Expressions: Value types and Reference types- Variable Declaration and initialization – Value Data Types- Reference Data types – Boxing and un boxing- Arithmetic operators-Text box control – Label control- Button control– Control Statements: IF statement – Radio button, Check box, Group Box, List Box, Checked list box, Combo box Control – Select.. Case, While, Do, for statements

Unit III

Methods and Arrays: Type of methods- Arrays- One dimensional- multidimensional Arrays- Jagged Arrays - Classes Properties and Indexes: Definition and usage of a class- Constructor overloading – Copy constructor – Instance and shared Class members – Shared constructors – Properties – Indexers- Inheritance and Polymorphism: Virtual Methods- Abstract Classes and Abstract Methods- Sealed classes

Unit IV

Definition and usage of Interfaces – Namespaces – Delegates – Events – Default Exception Handling Mechanism – User Defined exception handling mechanism – Back tracking – Throw statement – Custom exception – Usage of thread – Thread class – Start(),Abort(), Join(), Sleep(), Suspend() and Resume methods

Unit V

I/O Streams: Streams – Binary data files – Text files – Data files – File info and Directory Info classes – Database Connectivity: Advantages of ADO.NET – Managed Data providers – Developing simple application – Creation of a Data table – Retrieving Data from Tables – Table updating

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Text Book

Visual Basic.Net, C. Muthu, Vijay Nicole Imprints Private Limited

(Unit I : Chapter 2

Unit II: Chapter 3, 4

Unit III: Chapter 5, 6, 7

Unit IV: Chapter 8, 9, 10, 11

Unit V: Chapter 12, 15)

Reference Books

1. The Complete Reference -Visual Basic .NET – Jeffrey R. Shapiro, Tata McGraw Hill, 2002
2. Programming Microsoft Visual Basic.NET – Francesco Balena, Micro soft press

Question Paper pattern

Maximum Marks: 75

Exam Duration: Three Hours

Part A 10x2 = 20 Answer All Question (Two questions from each unit)

Part B 5x5 = 25 Answer All questions (Either or Type – Two questions from each unit)

Part C 3 x10 30 Answer any THREE questions (One question from each unit)

Signature of the HOD

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RAJAH SERFOJI GOVT. COLLEGE (AUTONOMOUS)
THANJAVUR -613005

Credits : 5
Hours/Week : 3
Medium of instruction: English

Code: RR4CSP4

B.Sc(Computer Science) - Semester: 4
(For students admitted from 2015-2016 onwards)

VISUAL BASIC .NET Lab

1. Develop a project to read in the salaries of three persons through three text boxes and compute the average salary
2. Develop a project that computes simple interest and compound interest on the basis of deposit, rate of interest and period of deposit, which are assumed to be provided by the user through three different text boxes
3. A bank collects an interest of 10% on loans given up to Rs.5000, 12% for loans between Rs. 5001 and Rs. 10000 and 15% for loans above Rs. 10000. Develop a project to find one-year interest for a given amount according to the above lending policy.
4. Define a method named smallest () for finding the smallest of given four values.
5. Develop a project that reads in the temperatures at a hill station on four given days and then computes the minimum temperature for those four days.
6. Define a class named 'Numeric' as described below.

Data members: a, b

Methods: (A). Constructor
(B) Sum () to compute the sum of a and b
(C) Difference () to compute the difference of a and b
(D) Product () to compute product of a and b
(E) Quotient () to compute the quotient a/b

Within an event handling method create an object of the class 'Numeric' and invoke methods.

7. Define a class named 'College' as described below

Data members: College name, Location

Methods: (A) Constructors

(B) Display () to display the college name, Principal name, location.

Define another class named department which derives from the 'College' and has the following description

Data members: Department name, HOD name, Staff strength

Methods: (A) Constructors that invoke the display () method of the 'College'

class

(B) Display () that invokes the display method of 'College' class in addition it should display the department name, HOD name, and staff strength

Within event-handling method create an object of the 'Department' class and invoke its display () method

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8. Define an interface named 'shape2d' that contains the declaration of the method getArea ().
Define class named 'Rectangle', such that it implements the interface 'shape2d' and has the following description:

Data member : Length, Breadth
Methods : (A) Constructor
 (B) Get Area ()
Within event-handling method, create an object for the class 'Rectangle' and invoke the get Area ().
9. Assign the job of generating the factorials of 20 natural numbers to a thread. Create an object for the thread and get the work done.
10. Create a file containing the names of 10 employees of a small firm. Develop a project to list the names of only the female employees.

Signature of the HOD

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RAJAH SERFOJI GOVT. COLLEGE (AUTONOMOUS)
THANJAVUR -613005

Credits : 5
Hours/Week : 4
Medium of instruction: English

Code: RR5CS5

B.Sc (Computer Science) - Semester: 5
(For students admitted from 2015-2016 onwards)

DATA BASE SYSTEMS

Unit I

Introduction: Database applications-Purpose of database systems-View of data-Database languages-Relational Databases – Database design – Data storage and querying – Transaction management – Database architecture – Data mining and retrieval – Specialty databases – Database users and administrators – History of Database systems.

Unit II

Relational model: Structure of Relational databases – Database schema – Keys – Schema diagrams – Relational query languages – Relational Algebra operations.

Unit III

SQL: Over view of SQL- SQL Data definition - Basic structure of SQL queries – Additional Basic Operations – set operations – Null values- Aggregate functions- Nested sub queries – Modification of the database.

Unit IV

Database Design and E-R model: Overview of Design process-Entity Relationship Model-Constraints – Removing Redundant attributes in entity sets-Entity Relationship Diagrams.

Unit V

Database Design: Introduction – Pitfalls in relational database design-decomposition- functional dependencies - Normalization– first normal form – second normal form – BCNF– Fourth normal form – Denormalization.

Text Book:

1. Database System Concepts, Abraham Silberschatz, Henry F. Korth , S. Sudarshan McGraw Hill International -Sixth Edition (Unit I, II, III and IV)
2. Fundamentals of Database Management Systems Alexis leon, Mathews Leon, and Vijay Nicole imprints private limited Chennai Second Edition (Unit V)

Unit I - Chapter 1

Unit II – Chapter 2, 2.1-2.5, 6.1

Unit III – Chapter 3.1 - 3.9

Unit IV – Chapter 7.1 – 7.7

Unit V – Chapter 9.1 – 9.5, 9.9-9.13, 9.17

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Reference Book:

An Introduction to Database Systems, C.J.Date, Addison Wesley, Third Edition

Question Paper pattern

Maximum Marks: 75

Exam Duration: Three Hours

Part A 10x2 = 20 Answer All Question (Two questions from each unit)

Part B 5x5 = 25 Answer All questions (Either or Type – Two questions from each unit)

Part C 3 x10 30 Answer any THREE questions (One question from each unit)

Signature of the HOD

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RAJAH SERFOJI GOVT. COLLEGE (AUTONOMOUS)
THANJAVUR -613005

Credits : 4
Hours/Week : 3
Medium of instruction: English

Code: RR5CSP5

B.Sc (Computer Science) - Semester: 5
(For students admitted from 2015-2016 onwards)

RDBMS Lab

QUERIES

1. Simple queries
2. Built in functions
3. Aggregate functions
4. Update operations
5. Joining two tables

PL-SQL

6. Mark list
7. Electricity Bill
8. Payroll processing
9. Report using Order By Clause
10. Report using Group By Clause

Signature of the HOD

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RAJAH SERFOJI GOVT. COLLEGE (AUTONOMOUS)
THANJAVUR -613005

Credits : 4
Hours/Week : 7
Medium of instruction: English

Code: RR5CSEL1

B.Sc(Computer Science) - Semester: 5
(For students admitted from 2015-2016 onwards)

COMPUTER ARCHITECTURE

Unit - I: Digital Logic Circuits

Digital computers – Logic Gates – Boolean Algebra – Map simplification – Combinational Circuits – Flip Flops Sequential Circuits.

Unit - II: Digital components

Integrated circuits – Decoders – Multiplexers- Registers – Shift Registers – Binary counters – Memory Unit.

Unit - III: Data Representation

Data Types – Complements – Fixed Point representations – Floating Point representations – Other binary codes – Error detection codes.

Unit - IV: Register Transfer and Micro operations

Register transfer Language – Register transfer – Bus and Memory Transfer – Arithmetic Micro operations – Logic Micro operations – Shift Micro operations – Arithmetic Logic Shift Unit.

Unit - V: Central Processing Unit

Introduction - General Register organization – Stack organization – Instruction formats – Addressing modes – Data transfer and manipulation – Program control.

Text Book:

Computer system and architecture by Morris Mano M, Prentice Hall of India, 3rd Edition – 1999.

(Unit I: Chapter 1.1 – 1.7

Unit II: Chapter 2.1 – 2.7

Unit III: Chapter 3.1 – 3.6

Unit IV: Chapter 4.1 – 4.7

Unit V: Chapter 8.1 – 8.7)

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Question Paper pattern

Maximum Marks: 75

Exam Duration: Three Hours

Part A 10x2 = 20 Answer All Question (Two questions from each unit)

Part B 5x5 = 25 Answer All questions (Either or Type – Two questions from each unit)

Part C 3 x10 30 Answer any THREE questions (One question from each unit)

Signature of the HOD

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RAJAH SERFOJI GOVT. COLLEGE (AUTONOMOUS)
THANJAVUR -613005

Credits : 4
Hours/Week : 7
Medium of instruction: English

Code: RR5CSEL2

B.Sc(Computer Science) - Semester: 5
(For students admitted from 2015-2016 onwards)

SOFTWARE ENGINEERING

Unit-I

Introduction to Software Engineering: Definitions – Size factors- Quality and productivity Factors- Planning a software project: Planning the development Process – Planning an Organizational Structure.

Unit II

Software Cost Estimation: Software Cost factors – Software Cost Estimation Techniques – Staffing-Level Estimation – Estimating Software Estimation Costs.

Unit III

Software Requirements Definition: The Software Requirements Specification – Formal Specification Techniques. Software Design: Fundamental Design Concepts – Modules and Modularization Criteria.

Unit IV

Design Notations – Design Techniques. Implementation issues: Structured Coding Techniques – Coding Style – Standards and Guidelines – Documentation Guidelines.

Unit V

Verification and Validation Techniques: Quality Assurance – Walkthroughs and Inspections – Unit Testing and Debugging – System Testing. Software Maintenance: Enhancing Maintainability during Development – Managerial Aspects of Software Maintenance - Configuration Management.

TextBook:

Software Engineering Concepts – Richard Fairley, 1997, Tata McGraw Hill.

(Unit I: Chapter 1.1, 1.2, 1.3, 2.3, 2.4

Unit II: Chapter 3.1, 3.2, 3.3, 3.4

Unit III: Chapter 4.1, 4.2, 5.1, 5.2

Unit IV: Chapter 5.3, 5.4, 6.1, 6.2, 6.3, 6.4

Unit V: Chapter 8.1, 8.2, 8.5, 8.6, 9.1, 9.2, 9.3)

RAJAH SERFOJI GOVT. COLLEGE (AUTONOMOUS)
THANJAVUR -613005

Reference Book

Software Engineering – Rojer S. Pressman, Tata Mcgraw Hill, 5th Edition

Question Paper pattern

Maximum Marks: 75

Exam Duration: Three Hours

Part A 10x2 = 20 Answer All Question (Two questions from each unit)

Part B 5x5 = 25 Answer All questions (Either or Type – Two questions from each unit)

Part C 3 x10 30 Answer any THREE questions (One question from each unit)

Signature of the HOD

COE

RAJAH SERFOJI GOVT. COLLEGE (AUTONOMOUS)
THANJAVUR -613005

Credits : 4
Hours/Week : 6
Medium of instruction: English

Code: RR6CS6

B.Sc(Computer Science) - Semester: 6
(For students admitted from 2015-2016 onwards)

MICROPROCESSOR AND ITS APPLICATIONS

Unit – I

Evaluation of Microprocessor – Single Chip Microcomputer- CPU– memory – Buses – Microprocessor Application– processor Architecture – Intel 8086: – Pin description of 8086- operating modes-Pin Description for Minimum and Maximum mode.

Unit – II

Functional units of Intel 8086-register of Intel 8086- interrupts - Addressing modes of Intel 8086- classification of 8086 Instruction – Description of 8086 Instruction.

Unit – III

Intel 8086 Assembly language programming – Addition - subtraction – Multiplication – Division - finding the largest and smallest numbers in an array – Arranging a series of numbers in ascending and descending order – Sum of a series of numbers — Block Move byte and word move.

Unit IV

Peripheral devices and interfacing: Addressing space partitioning – Memory and I/O interfacing – Data transfer schemes – Interrupts of Intel 8085 – Interfacing Devices and I/O devices – I/O ports: Programmable Peripheral Interface – Programmable Counter / Interval Timer – A/D Converter and D/A Converter.

Unit V

Microprocessor Applications – Delay Subroutines –7 segment LED Displays – Frequency Measurement – Temperature measurement and control – Water Level Indicator – Microprocessor based Traffic Control.

Text Book:

Fundamentals of Microprocessor and Microcomputers - Badri Ram – 7th Editions - Dhanpat Rai and Sons -2010.

Unit 1: 1.2, 1.5, 1.8, 1.9, 1.10, 1.29, 11.2.1, 11.2.2, 11.2.3, 11.2.4

Unit II: 11.2.5, 11.2.6, 11.2.7, 11.2.11, 11.3, 11.5

Unit III: 11.6

Unit IV: 7.2, 7.3, 7.4, 7.5, 7.6, 7.7.1, 7.11, 8.2, 8.12

Unit V: 9.2, 9.3, 9.5.1, 9.6.1, 9.6.4, 9.8

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Reference Book:

Microprocessor Architecture, Programming and Applications with the 8085/8080A -
ROMs S. Ganokar , Wiley Eastern -1990

Question Paper pattern

Maximum Marks: 75

Exam Duration: Three Hours

Part A 10x2 = 20 Answer All Question (Two questions from each unit)

Part B 5x5 = 25 Answer All questions (Either or Type – Two questions from each unit)

Part C 3 x10 30 Answer any THREE questions (One question from each unit)

Signature of the HOD

COE

RAJAH SERFOJI GOVT. COLLEGE (AUTONOMOUS)
THANJAVUR -613005

Credits : 4

Code: RR6CS7

Hours/Week : 6

Medium of instruction: English

B.Sc(Computer Science) - Semester: 6
(For students admitted from 2015-2016 onwards)

OPERATING SYSTEM

Unit I:

Importance of operating system – Basic concepts and terminology – an operating system resource manager – Os process view point - I/O programming.

Unit II: Memory Management

Single contiguous allocation – partitioned allocation – relocatable partitioned memory management – paged memory management - demand paged memory management – segmented memory management – segmented and demand paged memory management .

Unit III: Processor management

State model - Job scheduling – process scheduling – Process synchronization.

Unit IV: Device management

Techniques for device management – device characteristics-hardware considerations – I/O traffic controller, I/O scheduler, I/O device handlers – Virtual devices.

Unit V: Information management

Introduction - A Simple file system - general model of a file system – logical file system - physical file systems.

Text Book:

“Operating System”, Stuart .E. Madnick and John J. Donovan, Tata McGraw Hill book company limited.

(Unit I: Chapter 1.1, 1.2, 1.3, 1.4, 2.3

Unit II: Chapter 3.1, 3.3, 3.4, 3.5, 3.6, 3.7, 3.8

Unit III: Chapter 4.1, 4.2, 4.3, 4.5

Unit IV: Chapter 5.1, 5.2, 5.5, 5.6

Unit V : Chapter 6.1, 6.2, 6.3, 6.7, 6.8)

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THANJAVUR -613005

Question Paper pattern

Maximum Marks: 75

Exam Duration: Three Hours

Part A 10x2 = 20 Answer All Question (Two questions from each unit)

Part B 5x5 = 25 Answer All questions (Either or Type – Two questions from each unit)

Part C 3 x10 30 Answer any THREE questions (One question from each unit)

Signature of the HOD

COE

RAJAH SERFOJI GOVT. COLLEGE (AUTONOMOUS)
THANJAVUR -613005

Credits : 4
Hours/Week : 6
Medium of instruction: English

Code: RR6CSP6

B.Sc(Computer Science) - Semester: 6
(For students admitted from 2015-2016 onwards)

MICROPROCESSOR LAB

1. Addition – 8 bit using 8086
2. Subtraction – 8 bit using 8086
3. Multiplication – 16 bit using 8086
4. Division - 16 bit using 8086
5. Multi Byte Addition (16 bit) using 8086
6. Multi Byte Subtraction (16 bit) using 8086
7. Find the Smallest Number in a Data Array
8. Find the Biggest Number in a given list
9. To Arrange an Array of Data in Ascending or Descending order
10. Sum of series.
11. Finding the presence location of a given number in a list
12. Data transfer from one part to other part of memory.
13. Factorial of a number

Signature of the HOD

COE

RAJAH SERFOJI GOVT. COLLEGE (AUTONOMOUS)
THANJAVUR -613005

Credits : 4

Code: RR6CSEL3

Hours/Week : 6

Medium of instruction: English

B.Sc(Computer Science) - Semester: 6
(For students admitted from 2015-2016 onwards)

COMPUTER NETWORKS

Unit-I

Introduction: The use of Computer Networks – Networks Hardware – Network Software – The Reference Model. The Physical Layer: Guided Transmission media – Wireless Transmission.

Unit-II

The Data Link Layer: Data link layer design Issues – Error Detection and Correction – Elementary Data Link Protocols. The Medium Access control Sub Layer: The Channel Allocation Problem – Multiple Access Protocols.

Unit-III

The Network Layer: Network Layer Design issues – Routing algorithms – Congestion control algorithms – Internetworking – The Network Layer in the internet.

Unit-IV

The Transport Layer: The Transport Service – Elements of Transport protocols – A Simple Transport Protocol – The Internet Transport Protocols (UDP & TCP).

Unit-V

The Application Layer: DNS – The Domain Name System – Electronic Mail – The World Wide Web – Network Security : Cryptography – E-Mail security – Web security.

Text Book

Computer Networks, Andrew S.Tenenbaum, Prentice Hall, 4th Edition.

Unit I: Chapter 1.1, 1.2, 1.3, 1.4, 2.2, 2.3,

Unit II: Chapter 3.1, 3.2, 3.3, 4.1, 4.2,

Unit III: Chapter 5.1, 5.2, 5.3, 5.5, 5.6,

Unit IV: Chapter 6.1, 6.2, 6.3, 6.4, 6.5,

Unit V: Chapter 7.1, 7.2, 7.3, 8.1, 8.8, 8.9

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THANJAVUR -613005

Reference Book

Data Communications and Computer Networks, Prakash C.Gupta Prentice-Hall of India, 2006

Question Paper pattern

Maximum Marks: 75

Exam Duration: Three Hours

Part A 10x2 = 20 Answer All Question (Two questions from each unit)

Part B 5x5 = 25 Answer All questions (Either or Type – Two questions from each unit)

Part C 3 x10 30 Answer any THREE questions (One question from each unit)

Signature of the HOD

COE

RAJAH SERFOJI GOVT. COLLEGE (AUTONOMOUS)

THANJAVUR -613005

EDC – Bio –Chemistry and Statistics

Credits : 4

Code:

Hours/Week : 4

Medium of instruction: English

Semester:

(For students admitted from 2015-2016 onwards)

INTRODUCTION TO INFORMATION TECHNOLOGY

UNIT-I

Introduction to computers: Introduction-Importance of computers- Characteristics of computers- classification of computers- What computers can do- can't do - Uses of computers - Five Generations of Modern Computers- Classification of Digital computer Systems – Anatomy of a digital computer.

UNIT-II

Central Processing Unit (CPU) and Memory: Introduction - Central processing Unit (CPU)-Memory- RAM, ROM, Registers- factors affecting processor speed- Input Devices: Keyboard- Mouse- Trackball- Game Controllers- Scanners- Barcode Reader- Card Reader- Digitizer - Voice Recognition – Webcams - Digital Cameras- Video Cameras- OCR- OMR- ICR- MICR.

UNIT-III

Output devices: Introduction – monitor – printer- plotter – Introduction to computer software: Introduction- computer software- Hardware/software interaction- classification of software- operating system- utilities- compilers and interpreters- word processors – Spreadsheets- presentation software- image processors.

UNIT-IV

Internet & World Wide Web: Introduction, internet access – internet basic – internet protocol- internet addressing- World wide web (www). Overview of Electronic mail- Introduction- How E-mail works? – Why use e-mail- e-mail- name and addresses- mailing basics.

UNIT-V

Computer in Education and Training- Introduction-computer in schools- distance learning- Computers in Entertainment, science, Medicine and Engineering.

Text Book:

Fundamentals of Information Technology- 2ND Edition, Alexix Leon and Mathews Leon , Leon Vikas publishing House Pvt Ltd, Chennai

Unit I: Chapter 1,2,3,4

Unit II: Chapter 7, 9

Unit III: Chapter 10, 11

Unit IV: Chapter 24, 25

Unit V: Chapter 47, 48

RAJAH SERFOJI GOVT. COLLEGE (AUTONOMOUS)
THANJAVUR -613005

Question Paper pattern

Maximum Marks: 75

Exam Duration: Three Hours

Part A $10 \times 2 = 20$ Answer All Question (Two questions from each unit)

Part B $5 \times 5 = 25$ Answer All questions (Either or Type – Two questions from each unit)

Part C $3 \times 10 = 30$ Answer any THREE questions (One question from each unit)

Signature of HOD

COE