

Information Technology

➤ **LIST OF EXPERIMENTAL SETUP**

Subject : Communication Engineering –1(IIIrd sem)

- 1] To study AM with constant modulating signal.
- 2] To study AM with constant carrier signal.
- 3] To study Frequency Modulation.
- 4] To study AM demodulation.
- 5] To study Sensitivity of radio receiver.
- 6] To study Selectivity of radio receiver.
- 7] To study Fidelity of radio receiver.
- 8] To study FM discriminator.

Subject : Electronics Devices & Circuits (IIIrd sem)

- 1] To study the characteristics of Semiconductor diode.
- 2] To study the characteristics of Zener diode.
- 3] To study the different types of Rectifiers such as Half wave rectifier, Full wave rectifier & Bridge rectifier.
- 4] To study the types of filter circuits.
- 5] To study the characteristics of Transistors in common emitter mode.
- 6] To observe and plot Response of RC Coupled Amplifier
- 7] To study the Astable Multivibrator .
- 8] To simulate Full wave Rectifier circuit using Workbench.

Subject- Programming Methodology (IIIrd sem)

- 1] Write a java program to study basic components of java. Write a program on arithmetic operators
- 2] Write a program on conditional statements and looping statements.
- 3] Write a Java application to demonstrate class, object, method and constructor overloading.
- 4] Write a java program to demonstrate concept of command line argument and to demonstrate different methods of String Buffer class on an inputted string.
- 5] Write different applications using Javabook package.
- 6] Write a java application to pass object as parameter and array as an argument.
- 7] Write different application on Applet
- 8] Write an application in java which creates file menu with menu item. Frame with one Text field and button appears when user clicks on the menu item.
- 9] Write a java Application on mouse event.
- 10] Write a java Application on Key events.
- 11] Write a java application to demonstrate Inheritance and use of this operator and Write java application to demonstrate abstract class, static keyword and interface.
- 12] Write an application which reads and writes user defined byte array from and to file using low level file I/O.

Subject- C-Lab (UNIX)(IIIrd Sem)

- 1] To study the concept of UNIX operating system, basic commands and its file system.
- 2] To study and execute commands related to file management in UNIX Operating System.
- 3] To study and execute directory commands in UNIX.
- 4] To study and execute filtering action commands on the data in UNIX.
- 5] To study the Vi Editor.
- 6a) Write and execute program to read a number and print all the numbers, which divide the given number perfectly. Also count the numbers which divide given number perfectly.
- b) Write and execute program to read a string and find length of string.
- 7] To study and execute communication and email commands.
- 8] To study and execute commands for process status information.
- 9] To study and execute commands use in shell programming.
- 10] To study and execute shell programs.

Subject : Assembly Language Programming (IVth sem)

- 1] To study Debug Commands.
- 2a) Implementation and execution of Arithmetic instruction.
- b) Implementation and execution of logical instructions.
- 3] Write a program to manipulate the given operands with general Arithmetic instruction and store the result at the location 2000H and 2003H.
- 4] Write an instruction sequence that generates a byte size integrator in the memory location defined as RESULT. The value of the integrator is to be calculated from the logical equation
$$[\text{RESULT}] = [\text{AL}] * [\text{NUM 1}] + [\text{NUM 2}] * \text{AL} + \text{BL}$$
- 5] Write a 8086 to move the block of specified number of bytes from one memory location to another.
- 6] Write a procedure named SQUARE the squares the content in BL and places the result in BX.
- 7] a) WAP in TASM by using DOS INT 21H, function 09H, to display string.
- b) WAP using TASM to echo command line text to the screen.
- 8] Write a program using DOS INT 21H, function 08H, I tasm to obtain a secret password from user.
- 9] WAP in tasm to read date maintained using DOS INT 21h, function 2AH

Subject- Data Structures (IVth sem)

- 1] To study and implement basic operation on Arrays.
- 2] Write an application to study and implement basic operations performed on Strings
- 3] To implement selection sort and Bubble sort algorithm.
- 4] Implementation of basic operations on Linked lists.
- 5] To implement Array as a Stack.
- 6] To implement Linear search algorithm.
- 7] To implement array as a Circular Queue.
- 8] To Build Tree and implement In-order Traversal.

Subject- C-Lab (HTML)(IVth Sem)

- 1] a) To study the overview of web publishing and web paging.
b) To create web page using basic HTML tags.
- 2] Create web page using basic HTML tags.
- 3] Study of tags used for creating Tables.
- 4] To study tags used for creating list.
- 5] WAP to create a web page which displays frames.
- 6] Create a form for creating new email account.
- 7] To study cascaded style sheets in HTML.
- 8] To study java script using HTML tags.
- 9] Mini Projects.

Subject : Linear Electronic Circuit(IVth sem)

- 1a] Study of Op-amp as inverting amplifier.
- 1b] Study of Op-amp as non –inverting amplifier.
- 2] Study of op-amp as an
 - a)Integrator.
 - b)Differentiator.
- 3] Study of Op-amp Astable Multivibrator.
- 4] Study of Op-amp Monostable Multivibrator
- 5] Simulation of circuit using PSPICE.
 - a) Voltage control switch.
 - b) Current control switch.
- 6] Simulation of circuit using PSPICE.
 - a) Integrator.
 - b) Differentiator
- 7] Simulation of circuit using PSPICE.
 - a) Inverting Amplifier
 - b) Bipolar transistor amplifier.
- 8 a] Simulation of amplifier circuit for calculating Sensitivity analysis of amplifier using PSPICE.
 - b] Simulation of voltage control switch to calculate the coefficient of Fourier series for load current using PSPICE.
- 9 a] Simulation of RLC circuit using PSPICE.
 - b] Simulation of DC circuit with control DC source using PSPICE.
- 10] Simulation of circuit using PSPICE.
 - a) Clamper
 - b) Clipper

Subject : Communication Engineering -II(Vth sem)

- 1] Verification of sampling theorem and study of PAM .
- 2] Study of PWM technique.
- 3] Study of ASK technique.
- 4] Study of FSK technique.
- 5] Study of PSK technique.
- 6] Verification of TDM using two channel Transmitter and Receiver.
- 7] Study of FSK demodulator.
- 8] To study and verify various signal formats.
- 9] To study and verify Biphase codes.

Subject: Digital Integrated Circuits (Vth sem)

- 1] To verify of basic logic gates.
- 2a] To design the clocked SR flip-flops.
 - b] To design JK, D, T flip flop.
- 3] To study IC 74151 as an 8 bit multiplexer.
- 4] To study the binary word comparator.
- 5] To study the odd and even parity generator.
- 6] To study the BCD seven segment display decoder.
- 7] To study 3 bit synchronous up counter .
- 8] To design logic circuit to convert BCD to grey code as well as excess-3.
- 9] To study divide by 16 bit counter and divide by 10 bit counter.

Subject : Object Oriented Technology (Vth sem)

- 1] Write a C++ program using Class, Object, Constructor and Destructor.
- 2] Write a C++ program using New and Delete keyword.
- 3] Operator Overloading:
 - a) Write a C++ program using Unary Operator Overloading.
 - b) Write a C++ program using Binary Operator Overloading
- 4] Write a C++ program that illustrate concept of static variable, Copy Constructor
- 5] Write a C++ program on multiple inheritance and multilevel inheritance
- 6] Write a C++ program using Virtual Function and this pointer.
- 7] Write a C++ program to Read data from file and Write data to the file.
- 8] Write a C++ program on Function Template and class template.
- 9] Write a C++ program on exception handling.

Subject : Microprocessor Based Design (VIth sem)

- 1] To Study 8086 microprocessor kit
- 2] To execute basic programs on the microprocessor kit
- 3] To interface LCI card with the 8255 using 8086 microprocessor kit.
- 4] To study interfacing of ADC 0809 with 8086 Microprocessor
- 5] Write a program to compute average of 4 byte stored in an array in memory

- 6] Write a program for BCD to 7 Segment display conversion.
- 7] To study interfacing of 8253 PIT with 8086 in mode 1 and mode2
- 8] To study interfacing of 8253 PIT with 8086 in mode 3 and 4
- 9] Write a program for addition of 10, 8-bit numbers in series.
- 10] To evaluate given expression $Y = (A*B) + (C*D)$.

Subject: Operating Systems (VIth sem)

- 1] To study the basic Unix command
- 2] To Study VI editor
- 3] Write c program in Vi editor on UNIX platform
 - a) Write a C program for addition, subtraction, multiplication, division of two numbers
 - b) Write a c program, which swap two numbers
 - c) Write a c program print Fibonacci series
 - d) Write a c program, to find greatest of three numbers
 - e) Write a c program on nested –for loop
- 4] Write shell program in Unix
 - a) Write a shell program which performs different operation on string
 - b) Demonstrate the use of if – than-else and nested –if statement
 - c) Demonstrate the usage of a while -do loop and for loop
 - d) Demonstrate the use of case control structure
 - e) Write a program on command –line argument
- 5] To study the system call and use system call in program
- 6] To study the LEX and YACC tools.

Subject: Data Based Management System (VIth sem)

- 1] To execute basic SQL queries
- 2] Write SQL queries for the following order –by, Group-by, between & having.
- 3] Write SQL queries to perform different set operation
- 4] Write SQL queries to perform Aggregate function
- 5] Write SQL queries to perform Join operation
- 6] Write SQL queries to create a view of given database and perform various operations.
- 7] Write SQL queries to create Sequence
- 8] Write SQL queries to create Procedure
- 9] Write SQL Trigger to perform various actions.

Subject- C-Lab (vc++)(VIth Sem)

- 1] Write a program to display a simple window using MFC
- 2] Write a program to Register user window class
- 3] Write a program to display a message box when press mouse button
- 4] Write a program to display or print a message
- 5] Write a program in VC++ to display message using controls
- 6] Write a program VC++ to show a pop up menu on mouse right button click
- 7] Write a program in VC++ to insert (design) user define resources
- 8] Write a program in VC++ to Demonstrate Dialog box with control
- 9] Write a program in VC++ to design a simple function calculator using wizard

MFC

10]Write a program in VC++ to Demonstrate Document –View, Architecture.

Subject-Computer Network Programming practical (VIIth Sem)

- 1] To study File locking and unlocking Technique.
- 2] To study Pipes for Inter Process communication.
- 3] To study sending and Trapping of signals.
- 4] To study Message Queue as one form for Inter Process communication.
- 5] To study Semaphores as one form for Inter Process communication.
- 6] To study shared memory as one form for Inter process communication..
- 7] To study the utilities available for TCP/IP networking.
- 8] To study internet facilities under UNIX operating system.

Subject : Real Time Embedded System (VIIth sem)

- 1]To study 8051 Microcontroller architecture.
- 2]Program to display a message using 8051 Microcontroller.
- 3]Program to display number and alphabets on 7-segment display.
- 4]Program to demonstrate handling of external interrupt.
- 5]Program to demonstrate usage of timer , inter service.
- 6]Program to toggle the LED indicators.
- 7]Program to generate square wave of one hertz on output port.
- 8]To study analog to digital converter.

Subject: Software Project Management (VIIth sem)

List of lab sessions for projects:

- Introduction to practical, group making, and instructions regarding the selection of projects.
- Synopsis of all projects, introduction to project and problem definition.
- Scope of the project, problem statement, requirement analysis.
- Decomposition of scope into different functionalities, analysis of different functionalities.
- Creation of the SRS, and software design model.
- Software Coding.
- Software Testing

List of the Projects for different group:

- 1]Banking System
- 2]Airticket reservation
- 3]Online Examination
- 4]Student attendance system
- 5]Sorting mechanism in C.
- 6]Shopping mall module (Marketing)
- 7]Text to image converter
- 8]Student attendamce system.

Subject: Digital Signal Processing (VIIIth sem)

- 1] Study of standard discrete sequences.
- 2] Study of basic operations on Discrete sequences a) Arithmetic
b) Multiplication.
- 3] Study of basic operations on discrete sequences. A) Scaling. B)Folding.
- 4] To compute and verify Linear Convolution for given sequences.
- 5] To find cross correlation between two sequences.
- 6] To find Auto correlation of a sequence.
- 7] To find Pole/Zero of a given Z transform.
- 8] To compute and verify Discrete Fourier transforms.
- 9] To compute and verify Inverse Discrete Fourier transforms.

Subject- Internet Technology(VIIIth Sem)

- 1] Write a sample Servlet.
- 2] Write a program that will display number of times the Servlet is invoked.
- 3] Write a program that displays the information about the student from Database.
- 4] Write a program that implement Cookies and Servlet Chaining.
- 5] Create a document type definition using XML
- 6] Create schema and validate XML document.
- 7] Write a script to demonstrate the CSS using XML.
- 8] Write a program to study the implementation of function calculator using beans in Java.

Subject-Network Administration and Security (VIIIth sem)

- 1] Encryption using Columnar Transposition technique.
- 2] To implement RSA encryption and Decryption Algorithm.
- 3] To generate Message Digest.
- 4] To verify Key Translation Technique.
- 5] To study Kerberos authentication server.
- 6] To verify Base 64 Encoding algorithm..
- 7] To study SHA-1 Algorithm.
- 8] To implement Digital signature.

XV] LABORATORY**➤ List of Major Equipment(s) / Facilities****1. SERVER ROOM**

Sr.No	System configuration	No. of Systems	Total cost
1	Param US-90 SUN System	01	19,00,000/-
2	HP make Servers	03	5,40,000/-
3	Digital make Server	01	1,25,000/-
4	IBM e-Internet Server	01	1,00,000/-
5	IBM Application Server	02	2,00,000/-
6	Leased Line CISCO Router	01	50,000/-
7	3-COM Switches-24 port with line converters	03	1,50,000/-

List of available Softwares: -

Sr.No	Description	Cost
	System Software	
1	SCO Unix R.5.25 Users License	Rs.1,45,032
	SCO ODT Development System	Rs.41,184
2	Novell Netware V.4.1 25 Users	Rs.48,500
3	SCO Unix Multilingual Servers 25 Users	Rs.1,20,032
4	Window NT Server	Rs.1,54,000
5	SUN Solaris 2.4	Rs.6,07,323
6	RED HAT Linux	(Freeware)
7	Windows NT work Station	Rs.75,000
8	Windows 9x	Rs.76,000
9	Windows XP	Rs.5450
10	Borland C++ Compiler V.5.0	Rs.12,423
11	MS-FORTRAN	Rs.60,000
12	JAVA Workshop	Rs.25,000
13	M.S.Visual Studio V.6	Rs.13,000
	Application Softwares	
1	Matlab 6.1 10 Users	Rs.4,43,454
2	FPGA VHDL Software 5 Users	Rs.1,92,500
3	ORCAD PSPICE 10 Users	Rs.2,04,300
4	Oracle Developer 2000	Rs.1,15,000

5	Oracle Work Group Server	Rs.1,12,000
6	Power Builder Enterprise 5.0	Rs.85,000
7	SPAN Explorer Geographical Inf.System	Rs.2,18,000
8	AUTO-CAD R.13+Designer Bundle	Rs.72,800
9	EASI/PACE Image Analysis	Rs.2,88,288
10	Lotus Domino Server + 05 clients	Rs.97,213
11	Dragon Naturally Speaking	Rs.12,995
12	Norton Utilities	Rs.3,000
13	Master CAM Version 9.1	Rs.89,960
14	Solid Works 2001	Rs.71,400
15	Catia V.5 R 11 ED2	Rs.62,850
16	AUTODESK Land Desktop 2005	Rs.2,00,000
17	AUTODESK Inventor Series 9	Rs.32,900
18	Libsys: Library Management Software	Rs.1,35,000
19	ANSYS	Rs.1,39,000
20	Digiteck EPE Intel 8051 Embedded Dev. Board (RTOS)	Rs.2,10,000
21	Digiteck EPE Intel 6811 Motorola based Embedded Dev. Board (RTOS)	Rs.1,05,000
22	Build Master	Rs.33,000

2. PROJECT LAB

Sr.No	System configuration	No. of Systems	Total cost
1	WIPRO Intel P-IV, 2.8GHz Dual core Processor , Intel 865G Chipset , 2565 Mb RAM DDR , 80 Gb HDD ,15'' TFT Monitor, Multimedia Keyboard, Optical Mouse. WI-FI enabled	06	1,36,200/-
2	INTEL Celeron, 1.7 GHz, 845 GVL Intel Chipset Mother Board, 256 MB RAM , 40 GB HDD ,1.44 FDD	07	1,47,000/-
3	P-IV ,1.7 GHz, Intel Chipset Mother Board, 256 MB RAM , 40 GB HDD ,1.44 FDD	09	2,36,571/-
4	Digiteck-EPE for Intel 8051 Embedded development Board(1unit for each architecture comprises of Hardware & Software suitable for one	02	2,10,000/-

	student)		
5	Digiteck-EPE for Intel 6811 Motorola 68HC11 based Embedded development Board(01 No)	01	1,05,000/-
6	Air conditioners	04	1,16,660/-
7	P-200 MHz MMX dased PACKARD BELL Machines	05	1,89,691/-
8	Laptop (Lenovo Celeron A12)	01	28000/-
9	Laser Printer HP- Make Model 101F	02	11,200/-
10	Dot Matrix Printer 80	01	6,400/-

3. INFORMATION TECH. LAB

Sr.No	System configuration	No. of Systems	Total cost
1	Intel P-IV 2.8GHz Dual core Processor , Intel 865G Chipset , 2565 Mb RAM DDR , 80 Gb HDD ,15'' TFT Monitor, Multimedia Keyboard, Optical mouse. WI-FI enabled	20	4,54,000/-
2	Digital Venturis Pentium Machines	14	9,01,065/-
3.	Dyna-86 Kit	08	55,800/-
4	Air conditioners	04	1,16,660/-
5	Hp LaserJet Printer	01	
6	LCD Projector Sony Make 2000 Lumens Model-VPL-E83 (Semi Automatic)	01	49,900/-
7	OHP Projector Model Liberty Vision 250 with one extra spare Lcbmp	05	37,500/-
8	Laptop (Lenovo Celeron A12)	01	2,8000/-

4. SYSTEM SOFTWARE LAB

Sr.No	System configuration	No. of Systems	Total cost
1	Intel P-IV 2.8GHz Dual core Processor , Intel 865G Chipset , 2565 Mb RAM DDR , 80 Gb HDD ,15'' TFT Monitor, Multimedia Keyboard, Optical mouse.	20	4,20,000/-

5. LANGUAGE LAB

Sr.No	System configuration	No. of Systems	Total cost
1	Intel P-IV 2.8GHz Dual core Processor , Intel 865G Chipset , 2565 Mb RAM DDR , 80 Gb HDD ,15'' TFT Monitor, Multimedia Keyboard, Optical mouse.	10	2,10,000/-
2	<ul style="list-style-type: none">• Effective Communication• How to learn English(4)• Learn English• Team Building• Make Meetings Work• Grammar• Interviewing Skills	10 CD set	25,000/-