Manoharbhai Patel Institute of Engg. & Technology, Gondia

Department of Computer & Information Technology

Department of Computer Technology

List of Practical

Sem: 3rd sem

Subject: PLC

List of Practicals

1. Write a program to input three numbers and find the greatest of three numbers using :
   a) if…..else
   b) Logical operator
   c) Ternary/conditional operator
2. Write a program to calculate roots of quadratic equation using $Ax^2+Bx+C=0$

$$X = \frac{(-B)+-sqrtB^2-4AC}{2A}$$

3. Write a program to find sum of first seven terms of given series

$$\frac{1}{1!} + \frac{2}{2!} + \frac{3}{3!} + \ldots\ldots \frac{7}{7!}$$

4. Write a program to input15 elements in array(integers) in random order and do the following :
   a) Print them in ascending order
   b) Print them in descending order
   c) Find max and min
   d) Find sum and average of array

5. Write a program to find
   a) Transpose of a matrix
   b) Max element of a matrix and its position

6. Write a program to multiply a matrix A of order mxn with matrix B of order nxl.

7. Write a program using function to interchange value of two variables using
   a) Call by value
   b) Call by reference

8. Write a menu driven program to find
   a) Given number is prime or not
   b) Find factorial of number using recursion
   c) Find the given char is small letter, capital, digit or symbol.

9. Write a program that accepts the string and perform the following operations:
   a) String concatenate
   b) String copy
   c) String reverse(without library function)
   d) String length(without library function)

10. Write a program using a pointer to read an array of integers and print its elements in reverse order

11. Define structure for the student database containing name, marks and percent of 50 students. Find the name of student scoring highest marks.

12. Write the various file operating modes and Write a program to write into and read from the file.

13. Write a program to concatenate two files using command line arguments.

14. Write a program to draw a rectangle with thick lines and fill it with thin inclined lines.

15. Write a program to justify a string of text horizontally and vertically.

Name of the Department: Computer Technology

Semester: 3

Laboratory Name: Computer workshop lab

Subject: Computer workshop -I

LIST OF PRACTICALS

1. Study of basic concept of HTML, structure of an HTML page and writing HTML document using notepad.
2. Create a HTML web page which shows the use of different tags in that. Design the page with an attractive background color, text color and background image.
3. Demonstration of Image tag. Give an example of Image insertion with all attributes (Height, Width, Alternate text etc.,).
4. List the various links tags. Write HTML program to demonstrate use of different Link, Alink, and Vlink attributes of body tag. Example: Create text as well as image link.
5. Create table with Rowspan and colspan attributes of table in HTML (prepare Time Table of your class). Include cell spacing and cell padding.
6. Use of frame in HTML. Create a page with three frames and display web pages in them.
7. Use of various elements (controls) in Forms (textbox, dropdown list, radio button, etc.,). Write HTML program to create E-Mail registration form.
8. Demonstrate following attributes using CSS (Cascades style sheet).
    - Color and Background
    - Font
    - Text
    - Border
    - Margin and List
9. Write HTML program using VbScript.
10. Create simple application that will do following
    - Declare and assign variable.
    - Operators and expression in JavaScript.
    - Looping in JavaScript.
    - Declare an array.
11. Study of Unix/Linux operating system

Name of the Department: Computer Technology

Semester: 3

Laboratory Name: Digital Circuit Lab

Subject: Digital Circuits & Microprocessor

List of Practical as per university syllabus:

1. **To study and verify the operation of logic gates.**
2. **To study and verify the De Morgan's Theorems.**
3. **To design and implement 1 bit Half &Full adder Circuit .**
4. **To design and implement a 4 bit Binary to Gray code converter using logic gates.**
5. **To design and implement a BCD code to 7 segment display using logic gates.**
6. **To design and implement a 2 line to 4 line decoder & realize a 4 line to 16 line decoder using it.**
7. **To design and implement a 4 line to 1 line multiplexer & realize 16 line to 1 line MUX using it.**
8. **To study & verify the operation of D,S-R,J-K, and T Flip Flops.**
9. **To design a 3 bit down counter for the sequence S0-S1-S2-S3-S4-S5-S6-S7 using JK Flip Flop.**
10. **To design a 3 bit up counter for the sequence S0-S1-S2-S3-S4-S5-S6-S7 using JK Flip Flop.**
11. **To design a 3 bit up-down counter for the sequence S0-S1-S2-S3-S4-S5-S6-S7 using JK Flip Flop.**

LAB MANUAL

Name of the Department: Computer Technology

Semester: 5th

Laboratory Name: Communication Electronics Lab

Subject: Advanced Microprocessor

List of Practical as per university syllabus:

1: BLOCK DATA TRANSFER

2: FIBONACCI SERIES

3: 8087 BDC DATA FORMAT, HYPOTENEUS OF TRIANGLE

4: 8087 REAL DATA FORMAT, HYPOTENEUS OF TRIANGLE

5: BCD TO HEX CONVERSION

6: FACTORIAL COMPUTATION

7: SOLVE ARITHMATIC EXPRESSION

8: FIND LARGEST NUMBER IN GIVEN ARRAY

9: FIND SMALLEST NUMBER IN GIVEN ARRAY

10: SEPARATE OUT EVEN AND ODD NUMBERS IN GIVEN ARRAY.

11: STUDY OF SBC-8051 MICROCONTROLLER KIT

12: 8051 PROGRAMS TO FILL DATA VALUE 3 IN ALL REGISTERS OF BANK 0.

13: 8051 PROGRAM TO FILL DATA VALUE 14 INTO ON CHIP MEMORY FROM ADDRESS 00 TO 07

14: 8051 PROGRAM TO FILL DATA VALUE 14 INTO EXTERNAL MEMORY FROM 0010 TO 0017

Name of the Department: Computer Technology

Semester: 5th

Laboratory Name: Communication Electronics Lab

Subject: Communication system

List of Practical as per university syllabus:

1) **To study Amplitude modulation & demodulation.**
2) **To study frequency modulation using IC 8038.**
3) **To study frequency demodulation using Foster Seeley.**
4) **To study phase modulation.**
5) **To study phase demodulation using PLL IC565.**
6) **To study DSB-SC balanced modulator & demodulator.**
7) **To study SSB-SC balanced modulator & demodulator.**
8) **To study pulse amplitude modulation & demodulation.**
9) **To study pulse width modulation & demodulation.**
10) **To study pulse position modulation & demodulation.**

Name of the Department: Computer Technology

Semester: 5th

Subject: Object Oriented programming

List of Practical as per university syllabus:

1. WAP to calculate factorial of a number using CLASS.
2. WAP to illustrate the use of Array of objects.
3. WAP to show the use of passing and returning of objects.
4. WAP to show the use of FRIEND function.
5. WAP to show the use of Static data member & static member function.
6. WAP to swap two numbers by i) pass by value ii) pass by reference.
7. WAP to show the overloading of unary operator.
8. WAP to show the use of binary operator.
9. WAP to show the constructor overloading.
10. WAP to show the use of destructors.
11. WAP to illustrate single inheritance.
12. WAP to illustrate multiple inheritances.
13. WAP to illustrate multilevel inheritance.
14. WAP to illustrate hybrid inheritance.
15. WAP to show the use of Virtual base Class.

Name of the Department: Computer Technology

Semester: 7th

Subject: CN

1. **To study the OSI reference model.**
2. **Introduction to Aloha and it's types.**
3. **To study the Ethernet and various types.**
4. **To study the token bus protocol.**
5. **To study the token ring.**
6. **Write a program for stop and wait protocol.**
7. **Write a program for go-back n protocol.**
8. **To study the router.**
9. **To study the Transmission Control Protocol (TCP).**
10. **To study the User Datagram Protocol (UDP).**

Name of the Department: Computer Technology

Semester: 7th

Subject: DBMS

List of Practical as per university syllabus:

1. **Study of Client Server Model.**
2. **Study of Entity-Relationship Model.**
3. **Creation of Table in database.**
4. **Creation of Table with constrains.**
5. **Use of ALTER statements.**
6. **Use of DROP & TRUNCATE statements.**
7. **Use of INSERT statements.**
8. **Use of SELECT statements.**
9. **Use of UPDATE statements.**
10. **Use of DELETE statements.**
11. **Use of BUILT-IN functions.**
12. **Use of ORDER-BY and HAVING Clause.**
13. **Use of Set operators.**
14. **Use of Nested queries.**
15. **Study of Triggers.**
16. **Study of embedded SQL.**
17. **Transaction control statement in SQL.**

Name of the Department: Information Technology

Department of Information Technology

Sem: 3rd sem

Subject: PLC

List of Practicals

16. Write a program to input three numbers and find the greatest of three numbers using :

d) If…..else
e) Logical operator
f) Ternary/conditional operator

17. Write a program to calculate roots of quadratic equation using $Ax^2+Bx+C=0$

$$X= \frac{(-B)+-sqrtB^2 -4AC}{2A}$$

18. Write a program to find sum of first seven terms of given series

$$\frac{1}{1!} + \frac{2}{2!} + \frac{3}{3!} + \ldots\ldots \frac{7}{7!}$$

19. Write a program to input15 elements in array(integers) in random order and do the following :

e) Print them in ascending order
f) Print them in descending order
g) Find max and min
h) Find sum and average of array

20. Write a program to find

c) Transpose of a matrix
d) Max element of a matrix and its position

21. Write a program using function to interchange value of two variables using

c) Call by value
d) Call by reference

22. Write a menu driven program to find

d) Given number is prime or not
e) Find factorial of number using recursion
f) Find the given char is small letter,capital, digit or symbol.

23. Write a program that accepts the string and perform the following operations:

e) String concatenate
f) String copy
g) String reverse(without library function)
h) String length(without library function)

24. Define structure for the student database containing name, marks and percent of 50 students. Find the name of student scoring highest marks.

25. Write the various file operating modes and Write a program to write into and read from the file.

Semester: 3rd

Subject: Computer Lab-I / Computer Workshop-I

List of Practical as per university syllabus:

COMPUTER LAB-I

G-01: Demonstration of computer hardware and Bios settings.
(North Bridge, South Bridge, PCI slots, ISA slots, AGP slot, memory bank slots, EIDE connector, Floppy connector, Chipset, Power connector, CPU slot, SMPS, Bios cell, Clock) (Ports-Serial, Parallel, PS/2, USB, Types of USB-A, B, Mini-A, Mini-B, Games, Ethernet/RJ42, Modem/RJ11, VGA, S-Video, HDMI, DVI- Mini &
Micro DVI, IEEE 1394 Interface, SCSI, Minijack)

G-02: To demonstrate and study the various types I/O devices.
(Ex: Printers, Mouse, Scanner, monitor (CRT, LCD) etc.)

G-03: Execution of internal and external dos commands.
(Ex: Format, type, copy con, prompt, etc.)

G-04: Batch programming: Command Redirection and Pipelines, Variables and Control constructs.

G-05: Demonstration of system tools for windows operating systems.

G-06: Experiment based on system Registry of windows operating system.

G-07: Demonstration of complete booting process of windows operating system.

G-08: Demonstrate and study of networking accessories and Commands(Hub, Switch, Bridge, Router, LAN Card, CAT cables, Coaxial cable, Fiber Optic cable, Repeater, Modem, Commands: ping, tracert etc.)

G-09: To demonstrate and study the troubleshooting of a computer system.
(Power supply problem, Boot failure Problem, Display problem, RAM problem, Motherboard Problem, CPU problem, CMOS battery problem etc.)

Name of the Department: Information Technology

Semester: 3rd

Laboratory Name: Digital Circuit Lab

Subject: Digital Electronics & Fundamental of Microprocessor

List of Practical as per university syllabus:

1. **To study and verify the operation of logic gates.**
2. **To study and verify the De Morgan's Theorems.**
3. **To design and implement 1 bit Half &Full adder Circuit .**
4. **To design and implement a 4 bit Binary to Gray code converter using logic gates.**
5. **To design and implement a BCD code to 7 segment display using logic gates.**
6. **To design and implement a 2 line to 4 line decoder & realize a 4 line to 16 line decoder using it.**
7. **To design and implement a 4 line to 1 line multiplexer & realize 16 line to 1 line MUX using it.**
8. **To study & verify the operation of D, S-R J-K, and T Flip Flops.**
9. **To design a 3 bit down counter for the sequence S0-S1-S2-S3-S4-S5-S6-S7 using JK Flip Flop.**
10. **To design a 3 bit up counter for the sequence S0-S1-S2-S3-S4-S5-S6-S7 using JK Flip Flop.**
11. **To design a 3 bit up-down counter for the sequence S0-S1-S2-S3-S4-S5-S6-S7 using JK Flip Flop.**

Name of the Department: Information Technology

Semester: 5th

Laboratory Name: Communication Electronics Lab

Subject: ITDC

List of Practical as per university syllabus:

1) **To study various functions of trainer kit(TDM pulse code modulation transmitter & receiver trainer) ST2103 & ST2104, (data formatting & carrier modulation transmitter & receiver trainer) ST2106 & ST2107.**
2) **To study ASK modulation & demodulation.**
3) **To study FSK modulation & demodulation.**
4) **To study BPSK modulation & demodulation.**
5) **To study QPSK modulation & demodulation.**
6) **To study PCM.**
7) **To study multiplexing methods- TDM.**

Name of the Department: Information Technology

Semester: 5th

Subject: DIC

List of Practical as per university syllabus:

1. Study of inverting opamp configuration and plotting the frequency response of the circuit.

2. Study of non-inverting opamp configuration and plotting the frequency response of the circuit.

3. Design of differential amplifier with Op-amp.

4. Study the characteristics of a differential amplifier.

5. Study of Analog Integrator circuit and plotting its frequency response.

6. Study of an Analog Differentiator circuit.

7. Measurement of input offset voltage and input bias current.

8. Study of monostable multivibrator using IC 555.

9. Study of astable multivibrator using IC 555.

10. Design of Square wave generator with the help of Op-amp.

Semester: 5th

Laboratory Name: Computer Center

Subject: Computer Graphics

List of Practical as per university syllabus:

1. **Write a program to draw a line using DDA Algorithm.**
2. **Write a program to draw a line using Bresenham's Algorithm.**
3. **Write a program to draw a line using Bresenham's Algorithm with divided screen in 4 quadrants.**
4. **Write a program to draw a circle in first quadrant using Bresenham's Circle Generation Algorithm.**
5. **Write a program to draw an ellipse using Mid-point algorithm.**
6. **Write a program to draw a polygon using Bresenham's Line Generation Algorithm.**
7. **Write a program to fill a polygon based on scan-line polygon filling algorithm.**
8. **Write a program to fill a polygon using Edge Fill Algorithm.**
9. **Write a program to translate an object.**
10. **Write a program to reflect an object about an origin.**
11. **Write a program to reflect an object about x-axis.**
12. **Write a program to perform rotation transformation.**
13. **Write a program for clipping a line outside the window boundary using Sutherland-Cohen Line Clipping Algorithm.**

Semester: 5th semester

Subject: OOM

List of Practical as per university syllabus:

Demonstrate the use of

1. **Static data member and member function in C++**
2. **Constructor**
3. **Constructor Overloading**
4. **Destructor**
5. **Passing and Returning of objects**
6. **Friend Function**
7. **Single Inheritance**
8. **Multilevel Inheritance**
9. **Multiple Inheritance**
10. **Study and draw Object model using UML**
11. **Study and draw Dynamic model using UML**
12. **Study and draw Functional model using UML**

Name of the Department: Information Technology

Semester: 7th

Subject: CNI

1. To study the OSI reference model.
2. Introduction to Aloha and it's types.
3. To study the Ethernet and various types.
4. To study the token bus protocol.
5. To study the token ring.
6. Write a program for stop and wait protocol.
7. Write a program for go-back n protocol.
8. To study the router.
9. To study the Transmission Control Protocol (TCP).
10. To study the User Datagram Protocol (UDP).

Name of the Department: Information Technology

Semester: 7^{th}

Subject: DSP

List of experiments as per university syllabus:

1) **Introduction to MATLAB**
2) **To perform operations of shifting and additions on given finite duration sequence.**
3) **To perform operations of shifting and multiplication on given finite duration sequence.**
4) **To find the Fourier transform of given sequence using definition**

   $X(n)= (0.9*e^{(j*\pi/3)})^n$
   For n=0 to 10
5) **To find the Fourier transform of given sequence**
   $X(n)= (-0.9)^n$
   For n=0 to 10
6) **To find the Fourier transform of given sequence**
   $X1(n)= (-0.9)^n$
   For n=0 to 10
   Using MATLAB function "FREQZ" and relate it to direct evaluation.
7) **Comparative study of the fourier transform of sequences**
   $X1(n)= (-0.9)^n$
   For n=0 to 10

   $X2(n)= (0.9)^n$
   For n=0 to 10
8) **Comparative study of the fourier transform of sequences**
   $X1(n)= (0.9*e^{(j*\pi/3)})^n$
   For n=0 to 10

   $X2(n)= (0.9)^n$
   For n=0 to 10

9) To find the frequency response of the given system expressed by difference equation

Y(n)-y(n-1)+0.9y(n-2)=x(n)

Using MATLAB Function "FREQZ'.

10) To find the partial fraction expansion of a given function

$H(z)=Z+1/(Z^2-0.9Z+0.81)$

11) To plot a given sequence

X(n)= 2* δ(n+2)-δ(n-4) for n=-5 to +5

12) To plot a given sequence

X(n)=n[U(n)- U(n-10)+10*e^ (-0.3(n-10)) [U(n-10)- u (n-20)]

13) To plot four cycles of a periodic sequence whose once cycle is given

X(n)= {……..5,4,3,2,1,….}

14) To find the impulse response and step response of a given system described by the difference equation

Y(n)-y(n-1)+0.9y(n-2)=x(n)

15) Design a digital FTR low pass filter with given specification using hamming window.