

Any Eight Experiments from the following list.(Any Experiment from the following list can be performed either SCILAB/MATLAB/Any Other Software.)

1. Write a program to draw the per unit reactance diagram of a given power system.
2. Solution of building the Bus Admittance matrix for given power system network.
3. Solution of power flow problem of a given power system using Gauss-Siedel method.
4. Solution of power flow problem of a given power system using Newton Raphson Method.
5. Solution of power flow problem of a given power system using Fast Decoupled method.
6. Single Line to Ground Fault (L-G) analysis of a Three Phase Transmission Line at no load and light load conditions.
7. Line to Line Fault (L-L) analysis of Three Phase Transmission Line at No load and Light load conditions.
8. Double Line to Ground Fault (LLG) analysis of Three Phase Transmission Line at No load and Light load conditions.
9. Symmetrical L-L-L Fault analysis of Three Phase Transmission Line at No load and Light load conditions.

- 1 Study of Architecture of 8085
- 2 Assembly language program for addition and subtraction of 8 bit & 16 bit numbers based on 8085 microprocessor
- 3 Assembly language program for multiplication of two numbers based on 8085 microprocessor
- 4 Assembly language program for Multiplication and division of two numbers based on 8085 microprocessor
- 5 Assembly language program for determination of smaller and larger no based on 8085 microprocessor
- 6 Assembly language program for ascending and descending order based on 8085 microprocessor
- 7 Assembly language program for rolling/flash LED based on 8085 microprocessor
- 8 Interfacing of 7 segment LED to 8085 microprocessor
- 9 Interfacing of Stepper motor with microprocessor
- 1 Programs based on arithmetic instructions for 8051 microcontroller
- 0
- 1 Interfacing of stepper motor to 8051 microcontroller
- 1
- 1 Interfacing of DC motor to 8051 microcontroller
- 2
- 1 Interfacing of converters ADC 0808/0809 and DAC 0808
- 3
- 1 Generate Delay using Timer section of 8051 microcontroller.
- 4

Conduct any 4 practicals from 1 to 7 and 4 practicals from 8 to 14.

1.V-I characteristics of various power electronics devices.(At least two devices SCR/MOSFET/IGBT/TRIAC/GTO)

Group A (minimum four)

2.Experimental analysis of single phase uncontrolled converter

3.Experimental analysis of single phase Half controlled converter

4.Experimental analysis of single phase fully controlled converter

5.Experimental analysis of three phase bridge inverter.

6.Experimental analysis of BUCK /BOOST/BUCK -BOOST converter

Group B

7.Simulation of Single phase Semi controlled converter

8.Simulation of Single phase Fully controlled converter

9.Simulation of Single phase inverter

3. Vernan Cooray. "Lightning Protection". Power and Energy services, IET.

BTEEL606 SWITCHGEAR AND PROTECTION LAB

01 CREDITS

Conduct any 8 practicals from given list

1. To verify characteristics of Static Overcurrent Relay.
2. To verify the characteristics Static over Voltage Relay.
3. To verify the characteristics of IDMT Relay.
4. To verify the characteristics of Reverse Power Overcurrent Relay/ Negative Sequence Relay.
5. To demonstrate working of Distance Protection Scheme for long transmission line.
6. To demonstrate working of Differential Protection of Transformer and sketch the schematic diagram for protection scheme.
7. To demonstrate working of Differential Protection of Alternator and sketch the schematic diagram for protection scheme.
8. Identify the components of different types of circuit breakers with their specifications (through visits/ videos/models)
9. To verify the characteristics of MCB, ELCB and HRC fuses.

Conduct any eight practical from given list

- 1 Symbols used in Electrical Engineering
- 2 Design and assembly of Choke with design report.
- 3 Design and assembly of Starter with design report.
- 4 Design and layout of simplex lap winding (Detailed Drawing Sheet)
- 5 Design and layout of wave winding (Detailed Drawing Sheet)
- 6 Design and layout of ac lap winding (Detailed Drawing Sheet)
- 7 Design and assembly of transformer with design report. (Detailed Sheet for General Assembly of transformer)
- 8 Design and assembly of three phase induction Motor with design report.(Detailed Sheet for General Assembly of Induction Motor)
- 9 Complete any two drawings sheets with the help of Computer Aided Design Software like AUTOCAD)

Any Eight Experiments from the following list.

1. Write a program to obtain: i) pole, zero and gain values from a given transfer functionii)Transfer function model from pole, zero, gain values.
2. Write a program to determine of step & impulse response for a first order unity feedback system
3. Write a program to generate various standard test signals.
4. Write a program to plot the root locus for a given transfer function of the system using MATLAB.
5. Write a program to plot the Bode Plot for a given system using MATLAB.
6. Write a program to plot the Nyquist Plot for a given system using MATLAB.
7. Write a program to design Proportional, Proportional + Integral, Proportional+ Derivative and P-I-D Controller for second order system.
8. Write a program to determine of step & impulse response for a second order unity feedback system
9. Write a program to determine state space model from transfer function model & vice versa.
10. Write a program to determine state space model from transfer function model & vice versa