

# ***Laboratory Manual***

## **Electronic Devices & Circuits**

Manual made by  
JNTU World Team

# Lab Manual For Electron Devices Circuits

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## **Lab Manual For Electron Devices Circuits:**

**Electronic Devices and Circuits Laboratory Manual** Srinivasa Murthy, 2015-10-03 This is a Electronic Devices and Circuits laboratory Manual meant for II year Electronics Electrical engineering students All the circuits in this book are tested

**Laboratory Manual for Electronic Devices and Circuits** David A. Bell, 2001 This lab manual accompanies Electronic Devices and Circuits 4 e **Fundamentals of Electronic Devices and Circuits Lab Manual** David Bell, 2009-11-22 The laboratory investigations in this manual are designed to demonstrate the theoretical principles set out in the book Fundamentals of Electronic Devices and Circuits 5 e A total of 43 laboratory investigations are offered involving the construction and testing of the circuits discussed in the textbook Each investigation can normally be completed within a two hour period The procedures contain some references to the textbook however all necessary circuit and connection diagrams are provided in the manual so that investigations can also be performed without the textbook *Laboratory Manual for Introductory Electronics Experiments* L. K. Maheshwari, M. M. S. Anand, 1979 *Laboratory Manual For Electronic Devices And Circuits* 4Th Ed. Bell, *Lab Manual [for] Electronic Devices* John M. Jeffords, 1989 *ELECTRONICS LAB MANUAL (VOLUME 2)* NAVAS, K. A., 2018-10-01 This book is evolved from the experience of the author who taught all lab courses in his three decades of teaching in various universities in India The objective of this lab manual is to provide information to undergraduate students to practice experiments in electronics laboratories This book covers 118 experiments for linear analog integrated circuits lab communication engineering lab power electronics lab microwave lab and optical communication lab The experiments described in this book enable the students to learn Various analog integrated circuits and their functions Analog and digital communication techniques Power electronics circuits and their functions Microwave equipment and components Optical communication devices This book is intended for the B Tech students of Electronics and Communication Engineering Electrical and Electronics Engineering Biomedical Electronics Instrumentation and Control Computer Science and Applied Electronics It is designed not only for engineering students but can also be used by BSc MSc Physics and Diploma students **KEY FEATURES** Contains aim components and equipment required theory circuit diagram pin outs of active devices design tables graphs alternate circuits and troubleshooting techniques for each experiment Includes viva voce and examination questions with their answers Provides exposure on various devices **TARGET AUDIENCE** B Tech Electronics and Communication Engineering Electrical and Electronics Engineering Biomedical Electronics Instrumentation and Control Computer Science and Applied Electronics BSc MSc Physics Diploma Engineering **Lab Manual for Electronic Devices, Global Edition** THOMAS L. FLOYD, 2018-06-19 This laboratory manual is carefully coordinated to the text Electronic Devices Tenth edition Global edition by Thomas L Floyd The seventeen experiments correspond to the chapters in the text except the first experiment references Chapters 1 and the first part of Chapter 2 All of the experiments are subdivided into two or three Parts With one exception Experiment 12 B the Parts for the all experiments are completely

independent of each other The instructor can assign any or all Parts of these experiments and in any order This format provides flexibility depending on the schedule laboratory time available and course objectives In addition experiments 12 through 16 provide two options for experiments These five experiments are divided into two major sections identified as A or B The A experiments continue with the format of previous experiments they are constructed with discrete components on standard protoboards as used in most electronic teaching laboratories The A experiments can be assigned in programs where traditional devices are emphasized Each B experiment has a similar format to the corresponding A experiment but uses a programmable Analog Signal Processor ASP that is controlled by free Computer Aided Design CAD software from the Anadigm company [www.anadigm.com](http://www.anadigm.com) These experiments support the Programmable Analog Design feature in the textbook The B experiments are also subdivided into independent Parts but Experiment 12 B Part 1 is a software tutorial and should be performed before any other B experiments This is an excellent way to introduce the ASP technology because no other hardware is required other than a computer running the downloaded software In addition to Experiment 12 B the first 13 steps of Experiment 15 B Part 2 are also tutorial in nature for the AnadigmFilter program This is an amazing active filter design tool that is easy to learn and is included with the AnadigmDesigner2 AD2 CAD software The ASP is part of a Programmable Analog Module PAM circuit board from the Servenger company [www.servenger.com](http://www.servenger.com) that interfaces to a personal computer The PAM is controlled by the AD2 CAD software from the Anadigm company website Except for Experiment 12 B Part 1 it is assumed that the PAM is connected to the PC and AnadigmDesigner2 is running Experiment 16 B Part 3 also requires a spreadsheet program such as Microsoft Excel The PAM is described in detail in the Quick Start Guide Appendix B Instructors may choose to mix A and B experiments with no loss in continuity depending on course objectives and time We recommend that Experiment 12 B Part 1 be assigned if you want students to have an introduction to the ASP without requiring a hardware purchase A text feature is the Device Application DA at the end of most chapters All of the DAs have a related laboratory exercise using a similar circuit that is sometimes simplified to make laboratory time as efficient as possible The same text icon identifies the related DA exercise in the lab manual One issue is the trend of industry to smaller surface mount devices which are very difficult to work with and are not practical for most lab work For example almost all varactors are supplied as surface mount devices now In reviewing each experiment we have found components that can illustrate the device function with a traditional one The traditional through hole MV2109 varactor is listed as obsolete but will be available for the foreseeable future from Electronix Express [www.elexp.com](http://www.elexp.com) so it is called out in Experiment 3 All components are available from Electronix Express [www.elexp.com](http://www.elexp.com) as a kit of parts see list in Appendix A The format for each experiment has not changed from the last edition and is as follows Introduction A brief discussion about the experiment and comments about each of the independent Parts that follow Reading Reading assignment in the Floyd text related to the experiment Key Objectives A statement specific to each Part of the experiment of what the student should be able to do Components Needed

A list components and small items required for each Part but not including the equipment found at a typical lab station  
Particular care has been exercised to select materials that are readily available and reusable keeping cost at a minimum  
Parts There are two or three independent parts to each experiment Needed tables graphs and figures are positioned close to the first referenced location to avoid confusion Step numbering starts fresh with each Part but figures and tables are numbered sequentially for the entire experiment to avoid multiple figures with the same number Conclusion At the end of each Part space is provided for a written conclusion Questions Each Part includes several questions that require the student to draw upon the laboratory work and check his or her understanding of the concepts Troubleshooting questions are frequently presented Multisim Simulation At the end of each A experiment except 1 one or more circuits are simulated in a Multisim computer simulation New Multisim troubleshooting problems have been added to this edition Multisim troubleshooting files are identified with the suffix f1 f2 etc in the file name standing for fault1 fault2 etc Other files with nf as the suffix include demonstrations or practice using instruments such as the Bode Plotter and the Spectrum Analyzer A special icon is shown with all figures that are related to the Multisim simulation Multisim files are found on the website [www.pearsonglobaledition.com](http://www.pearsonglobaledition.com) Floyd Microsoft PowerPoint slides are available at no cost to instructors for all experiments The slides reinforce the experiments with troubleshooting questions and a related problem and are available on the instructor s resource site Each laboratory station should contain a dual variable regulated power supply a function generator a multimeter and a dual channel oscilloscope A list of all required materials is given in Appendix A along with information on acquiring the PAM As mentioned components are also available as a kit from Electronix Express the kit number is 32DBEDFL10

**Laboratory Manual to Accompany Electronic Devices and Circuits and Electronic Devices and Circuits Conventional Flow Version** Michael Hassul, Don Zimmerman, 1997-01-01 *Introductory Electronic Devices and Circuits* Robert T. Paynter, W. R. Miller, C. D. Menezes, 1989 *Laboratory Manual (MultiSIM Emphasis) to Accompany Electronic Devices and Circuit Theory* Robert L. Boylestad, Louis Nashelsky, 2005-04 **PSpice for Circuit Theory and Electronic Devices** Paul Tobin, 2022-05-31 PSpice for Circuit Theory and Electronic Devices is one of a series of five PSpice books and introduces the latest Cadence Orcad PSpice version 10.5 by simulating a range of DC and AC exercises It is aimed primarily at those wishing to get up to speed with this version but will be of use to high school students undergraduate students and of course lecturers Circuit theorems are applied to a range of circuits and the calculations by hand after analysis are then compared to the simulated results The Laplace transform and the s plane are used to analyze CR and LR circuits where transient signals are involved Here the Probe output graphs demonstrate what a great learning tool PSpice is by providing the reader with a visual verification of any theoretical calculations Series and parallel tuned resonant circuits are investigated where the difficult concepts of dynamic impedance and selectivity are best understood by sweeping different circuit parameters through a range of values Obtaining semiconductor device characteristics as a laboratory exercise has

fallen out of favour of late but nevertheless is still a useful exercise for understanding or modelling semiconductor devices Inverting and non inverting operational amplifiers characteristics such as gain bandwidth are investigated and we will see the dependency of bandwidth on the gain using the performance analysis facility Power amplifiers are examined where PSpice Probe demonstrates very nicely the problems of cross over distortion and other problems associated with power transistors We examine power supplies and the problems of regulation ground bounce and power factor correction Lastly we look at MOSFET device characteristics and show how these devices are used to form basic CMOS logic gates such as NAND and NOR gates     **Electronic Devices and Circuit Fundamentals, Solution Manual** Dale R Patrick, Stephen W.

Fardo, Ray E. Richardson, Vigyan (Vigs) Chandra, 2023-05-26 Devices and Circuit Fundamentals is Chapter Outline Learning Objectives Key Terms Figure List Chapter Summary Formulas Answers to Examples Self Exams Glossary of Terms defined

*Introductory Electronic Devices and Circuits* Robert T. Paynter, 2003 For courses in Electronic Devices or Semiconductors This text makes comprehension of material a top priority and encourages students to be active participants in the learning process The electron flow and conventional flow versions of this text provide a readable and thorough approach to electronic devices and circuits and support discussions with an abundance of learning aids to motivate and assist students at every turn The sixth edition of this well established text features significant art improvements throughout added EWB simulation problems and a redesigned lab manual     **Electronic Devices : Circuits and Applications** William D.

Stanley, 1989     **Lab Manual to Accompany Introductory Electronic Devices and Circuits** , 2000     *Lab Manual [for] Electronic Devices and Circuit Theory, Fifth Edition* Robert L. Boylestad, Louis Nashelsky, Franz Monssen, 1992

**Laboratory manual for electronic devices and circuits** , 2004     *Electronic Devices* Gabriel Oltean, Mihaela-Laura Gordan, Costin Miron (inginer.), 2004     *Experimental Data for Electronic Devices and Circuits Laboratory Manual* David A. Bell, 2006-08-01 This book accompanies Electronic Devices and Circuits 4 e

## The Enigmatic Realm of **Lab Manual For Electron Devices Circuits**: Unleashing the Language is Inner Magic

In a fast-paced digital era where connections and knowledge intertwine, the enigmatic realm of language reveals its inherent magic. Its capacity to stir emotions, ignite contemplation, and catalyze profound transformations is nothing lacking extraordinary. Within the captivating pages of **Lab Manual For Electron Devices Circuits** a literary masterpiece penned with a renowned author, readers attempt a transformative journey, unlocking the secrets and untapped potential embedded within each word. In this evaluation, we shall explore the book's core themes, assess its distinct writing style, and delve into its lasting effect on the hearts and minds of those that partake in its reading experience.

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