

**1<sup>st</sup> SEMESTER EXAMINATION, 2022 – 23**  
**First Year, B. Tech. – Common to All Branch**  
**BASIC ELECTRONICS ENGINEERING**

Duration: 3:00 hrs

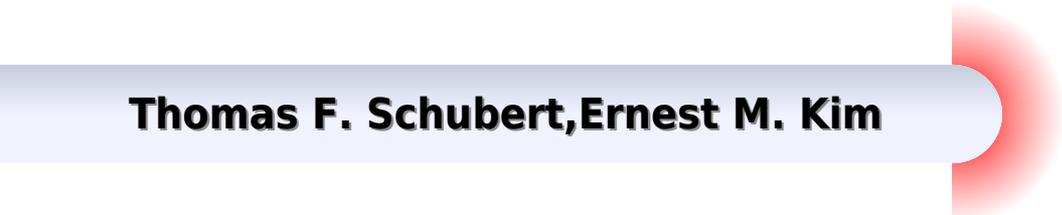
Max Marks: 100

*Note: - Attempt all questions. All Questions carry equal marks. In case of any ambiguity or missing data, the same may be assumed and state the assumption made in the answer.*

Q 1.	<p>Answer any four parts of the following.</p> <p>a) Describe the difference between <math>n</math>-type and <math>p</math>-type semiconductor materials. Define an intrinsic material, a negative temperature coefficient, and covalent bonding.</p> <p>b) Compare P-N junction diode and zener diode on the basis of:          (i) Symbol (ii) Direction of conduction (iii) Reverse breakdown (iv) Application (v) Resistance in reverse biased condition</p> <p>c) What is an LED? Explain its working principle. Write the advantages, and application of LED.</p> <p>d) Draw VI characteristics of PN junction diode and explain it.</p> <p>e) Determine the dc resistance levels for the diode of Fig. 1 at          (i) <math>I_D = 2</math> mA (low level)          (ii) <math>I_D = 20</math> mA (high level)          (iii) <math>V_D = -10</math> V (reverse-biased)</p>	5x4=20
	 <p style="text-align: center;">Fig. 1</p>	
	<p>f) For the series diode configuration of Fig. 2, determine <math>V_D</math>, <math>V_R</math>, and <math>I_D</math>.</p> <div style="text-align: center;">  </div> <p style="text-align: center;">Fig. 2</p>	

# Basic Electronics Engineering 1sem

**Thomas F. Schubert, Ernest M. Kim**



## **Basic Electronics Engineering 1sem :**

*Basic Electrical and Electronics Engineering*: S.K. Bhattacharya, 2011 Basic Electrical and Electronics Engineering provides an overview of the basics of electrical and electronic engineering that are required at the undergraduate level The book allows students outside electrical and electronics engineering to easily

**Basic Electronics Engineering** Satya Sai Srikant, Prakash Kumar Chaturvedi, 2020-04-27 This book is primarily designed to serve as a textbook for undergraduate students of electrical electronics and computer engineering but can also be used for primer courses across other disciplines of engineering and related sciences The book covers all the basic aspects of electronics engineering from electronic materials to devices and then to basic electronic circuits The book can be used for freshman first year and sophomore second year courses in undergraduate engineering It can also be used as a supplement or primer for more advanced courses in electronic circuit design The book uses a simple narrative style thus simplifying both classroom use and self study Numerical values of dimensions of the devices as well as of data in figures and graphs have been provided to give a real world feel to the device parameters It includes a large number of numerical problems and solved examples to enable students to practice A laboratory manual is included as a supplement with the textbook material for practicals related to the coursework The contents of this book will be useful also for students and enthusiasts interested in learning about basic electronics without the benefit of formal coursework

**Basic Electrical and Electronics Engineering** R. K. Rajput, 2012 **Basic Electronics - Second Edition** B Basavaraj, 2009-11-01 This is an established textbook on Basic Electronics for engineering students It has been revised according to the latest syllabus The second edition of the book includes illustrations and detailed explanations of fundamental concepts with examples The entire syllabus has been covered in 12 chapters

**Basic Electronics Engineering & Devices** Dr. R.K. Singh, Ashish Dixit, 2007 Basic Electronics ML Anand, 2022-01-03 For close to 20 years Basic Electronics Devices and Circuits has provided fundamental knowledge of the subject to all students Each chapter focuses on the core concepts and clearly elucidate the fundamental principles methods and circuits involved in electronics

*Basic Electronics* Harold D. Holbrook, Walter J. Seeley, 2013-10-22 Basic Electronics is an elementary text designed for basic instruction in electricity and electronics It gives emphasis on electronic emission and the vacuum tube and shows transistor circuits in parallel with electron tube circuits This book also demonstrates how the transistor merely replaces the tube with proper change of circuit constants as required Many problems are presented at the end of each chapter This book is comprised of 17 chapters and opens with an overview of electron theory followed by a discussion on resistance inductance and capacitance along with their effects on the currents flowing in circuits under constant applied voltages Resistances inductances and capacitances in series and parallel are considered The following chapters focus on impedance and factors affecting impedance electronics and electron tubes semiconductors and transistors basic electronic circuits and basic amplifier circuits Tuned circuits basic oscillator circuits and electronic power supplies are also described

together with transducers antennas and modulators and demodulators This monograph will serve as background training in theory for electronic technicians and as fundamental background for students who wish to go deeper into the more advanced aspects of electronics

Basic Electronics Engineering K Lal Kishor,2014-10-31 This course is the basic foundation course to understand the principles of Electronic Devices and Basic Circuits Though number of books are published in this area there is need for a book which explains clearly the principles and is helpful to students as well as teachers Though many students of electronic engineering go through this course still many students somehow fail to appreciate the essence of the subject The book is written in a simple lucid language along with derivation of equations and supported by numerous solved problems Salient Features Specifications of different devices colour codes typical values of resistor and capacitors circuit symbols unit conversion factors are provided Objective Type Questions and Conceptual Questions with Answers are provided at the end of each chapter

**Basic Electrical Engineering** Sahdev SK,2015 Attuned to the needs of undergraduate students of engineering in their first year Basic Electrical Engineering enables them to build a strong foundation in the subject A large number of real world examples illustrate the applications of complex theories The book comprehensively covers all the areas taught in a one semester course and serves as an ideal study material on the subject

Basic Electronics K. Uma Rao,M. A. Ibrar Jahan,2015-09 This book presents the basic concepts of electronic devices and circuits in an easy to understand manner The main topics covered include semiconductor diodes and their application in rectifiers and voltage regulators transistors their configurations and application in amplifier and oscillator circuits operational amplifiers and their applications and number systems and the fundamentals of analogue communication circuits and basic transducers A number of design and analytic numerical problems have been included to help the student understand the application of the concepts The book will be useful for the first year course in Engineering

Basic Electronics for Scientists James John Brophy,1971 For undergraduate science or engineering student with a basic understanding of electronic devices and circuits

**Electronics Engineering** O. N. Pandey,2022 This book is primarily designed to serve as a textbook for undergraduate students of electrical electronics and computer engineering but can also be used for primer courses across other disciplines of engineering and related sciences The first edition of this book was published in 2015 The book has been completely revised and a chapter on PSPICE has also been included The book covers all the fundamentals aspects of electronics engineering from electronic materials to devices and then to basic electronic circuits The topics covered are the basics of electronics semiconductor diodes bipolar junction transistors field effect transistors operational amplifiers switching theory and logic design electronic instruments and Pspice The book is written in a simple narrative style that makes it easy to understand for the first year students It includes a lot of illustrative diagrams and examples to enable students to practice Each chapter contains a summary followed by questions asked during the University examinations to enable students to practice before the final examination The contents of this book will be useful also for students and enthusiasts interested in

learning about basic electronics without the benefit of formal coursework

**Basic Electronics for Scientists and Engineers** Dennis L. Eggleston, 2011-04-28 Ideal for a one semester course this concise textbook covers basic electronics for undergraduate students in science and engineering Beginning with the basics of general circuit laws and resistor circuits to ease students into the subject the textbook then covers a wide range of topics from passive circuits through to semiconductor based analog circuits and basic digital circuits Using a balance of thorough analysis and insight readers are shown how to work with electronic circuits and apply the techniques they have learnt The textbook s structure makes it useful as a self study introduction to the subject All mathematics is kept to a suitable level and there are several exercises throughout the book Password protected solutions for instructors together with eight laboratory exercises that parallel the text are available online at [www.cambridge.org](http://www.cambridge.org) Eggleston

**Basic Electrical and Electronics Engineering** S. Shrivastava, 2018-10-30 Designed to serve as a core textbook for undergraduate first year engineering students It presents the topics of basic electrical and electronics engineering in simple easy to understand language Fundamentals are explained with suitable examples Core concepts are presented through examination oriented problems Practice problems are included at the end of each chapter for self evaluation Answers to practice problems are included with detailed explanations Includes elaborate illustration and circuit diagrams

**Basic Electrical and Electronics Engineering** Manoj Kumar, Sudhir Sharma, Jagjit Malhotra, 2005 This book is designed to meet the needs of first year students of degree engineering It provides a comprehensive coverage of the course and includes a large number of worked out examples theoretical exercises and numerical problems This book is divided into two parts Part I is related to electrical engineering and part II the electronics portion deals with both theory and applications of the major semiconductor devices diodes and transistors bipolar junction transistor BJTs and field effect transistors FETs in both discrete and integrated circuit IC form In addition to the coverage of the application of semiconductor devices to digital logic circuits established analog topics such as small signal operational and power amplifiers are included

**Fundamentals of Electronics: Book 1** Thomas F. Schubert, Ernest M. Kim, 2015-05-01 This book Electronic Devices and Circuit Application is the first of four books of a larger work Fundamentals of Electronics It is comprised of four chapters describing the basic operation of each of the four fundamental building blocks of modern electronics operational amplifiers semiconductor diodes bipolar junction transistors and field effect transistors Attention is focused on the reader obtaining a clear understanding of each of the devices when it is operated in equilibrium Ideas fundamental to the study of electronic circuits are also developed in the book at a basic level to lessen the possibility of misunderstandings at a higher level The difference between linear and non linear operation is explored through the use of a variety of circuit examples including amplifiers constructed with operational amplifiers as the fundamental component and elementary digital logic gates constructed with various transistor types Fundamentals of Electronics has been designed primarily for use in an upper division course in electronics for electrical engineering students Typically such a course spans a

full academic years consisting of two semesters or three quarters As such Electronic Devices and Circuit Applications and the following two books Amplifiers Analysis and Design and Active Filters and Amplifier Frequency Response form an appropriate body of material for such a course Secondary applications include the use in a one semester electronics course for engineers or as a reference for practicing engineers **Basic Electronics Engineering** N. K. Datta,2019 Basic Electronics: De, Debashis,Ghatak, Kamakhya Prasad,2003 Basic Electronics meant for the core science and technology courses in engineering colleges and universities has been designed with the key objective of enhancing the students knowledge in the field of electronics The book has an extensive coverage of **A First Course on Electronic Engineering** Anoop Mathew,Bensiker Raja Singh,Mercy Priya,2014 BASIC ELECTRONICS AND FUNDAMENTALS OF INFORMATION TECHNOLOGY comprehensively covers both the basic and advanced aspects of electronics and communication It explains the physics and principle of operation of diode and various other special purpose diodes including back diode and laser diodes alongwith essential semiconductor devices like BJT MOSFET and power electronic devices in detail The book also discusses a majority of the important configurations and applications of each device and includes review questions to reinforce and enhance learning Various modern day audio and video technology and systems are presented in the consumer electronics section and analog communication techniques to microwave and cellular communication principles in the communication engineering section **Basic Electronics** Rakesh Kumar Garg,Ashish Dixit,Pavan Yadav,2008

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