

## Electrical Machines 1 By Bakshi

The book covers all the aspects of Transmission and Distribution for undergraduate course. The various aspects of transmission and distribution systems, FACTS, sag calculations, parameters and performance of transmission lines, insulators, cables, substations and grounding systems are explained in the book with the help of comprehensive approach. The book starts with the discussion of basics of power system. It includes comparison of material required for overhead and underground systems. Various types of d.c. and a.c. distribution systems, EHVAC, HVDC and FACTS devices is also included in the book. The book explains the sag calculation under different conditions and sag template. In depth analysis of transmission line parameters is also included in the book. The book also covers the performance analysis of short, medium and long transmission lines along with circle diagram and methods of voltage control. The details of corona effect are explained in support. The book incorporates the discussion of types of insulators, string efficiency, methods of improving string efficiency, single and three core cables, grading of cables, heating and testing of cables. The chapter on substations includes the explanation of various types of substations, substation equipment's and key diagrams. The book also covers the various types of grounding systems, grounding grids and resistance of grounding systems. The book uses plain and lucid language to explain each topic. The book provides the logical method of explaining the various complicated topics and stepwise methods to make the understanding easy. Each chapter is well supported with necessary illustrations, self-explanatory diagrams and large number of solved problems. The book explains the philosophy of the subject which makes the understanding of the concepts very clear and makes the subject more interesting. The job interview is probably the most important step you will take in your job search journey. Because it's always important to be prepared to respond effectively to the questions that employers typically ask at a job interview Petrogav International has prepared this eBooks that will help you to get a job in oil and gas industry. Since these questions are so common, hiring managers will expect you to be able to answer them smoothly and without hesitation. This eBook contains 281 questions and answers for job interview and as a BONUS web addresses to 289 video movies for a better understanding of the technological process. This course covers aspects like HSE, Process, Mechanical, Electrical and Instrumentation & Control that will enable you to apply for any position in the Oil and Gas Industry.

Covering the fundamentals of electrical technology and using these to introduce the application of electrical and electronic systems, this text had been updated to include recent developments in technology. It avoids unnecessary mathematics and features improved teaching aids, including: worked examples; updated and graded review questions; colour diagrams and chapter summaries. It is designed for use by students on NC, HNC and HND courses in electrical and electronic engineering.

The comprehensive study of electric, magnetic and combined fields is nothing but electromagnetic engineering. Along with electronics, electromagnetics plays an important role in other branches. The book is structured to cover the key aspects of the course Electromagnetic Field Theory for undergraduate students. The knowledge of vector analysis is the base of electromagnetic engineering. Hence book starts with the

discussion of vector analysis. Then it introduces the basic concepts of electrostatics such as Coulomb's law, electric field intensity due to various charge distributions, electric flux, electric flux density, Gauss's law, divergence and divergence theorem. The book continues to explain the concept of elementary work done, conservative property, electric potential and potential difference and the energy in the electrostatic fields. The detailed discussion of current density, continuity equation, boundary conditions and various types of capacitors is also included in the book. The book provides the discussion of Poisson's and Laplace's equations and their use in variety of practical applications. The chapter on magnetostatics incorporates the explanation of Biot-Savart's law, Ampere's circuital law and its applications, concept of curl, Stoke's theorem, scalar and vector magnetic potentials. The book also includes the concept of force on a moving charge, force on differential current element and magnetic boundary conditions. The book covers all the details of Faraday's laws, time varying fields, Maxwell's equations and Poynting theorem. Finally, the book provides the detailed study of uniform plane waves including their propagation in free space, perfect dielectrics, lossy dielectrics and good conductors. The book uses plain, lucid language to explain each topic. The book provides the logical method of explaining the various complicated topics and stepwise methods to make the understanding easy. The variety of solved examples is the feature of this book which helps to inculcate the knowledge of the electromagnetics in the students. Each chapter is well supported with necessary illustrations and self-explanatory diagrams. The book explains the philosophy of the subject which makes the understanding of the concepts very clear and makes the subject more interesting.

This book covers the complete syllabi prescribed for undergraduate courses in electrical, electronics, mechanical and instrumentation engineering offered by various Indian universities. The objective of this text is to provide thorough knowledge in the emerging field of special electrical machines. It discusses the stepper motor, switched reluctance motor, permanent magnet dc and ac motors, brushless dc motors, single phase special electric motors, servomotors, linear electric machines and permanent magnet axial flux machines. Key Features • Chapter on permanent magnet axial flux machines (not available in other Indian authors' books) • Numerous worked-out examples • Based on classroom tested materials • Simplified mathematical analysis Besides undergraduate students, the book will also be useful to the postgraduate students specialising in drives and control, power electronics, control systems and mechatronics.

This fully revised second edition of Electrical Machines is systematically organized as per the logical flow of the topics included in electrical machines courses in universities across India. It is written as a text-cum-guide so that the underlying principles can be readily understood, and is useful to both the novice as well as advanced readers. Emphasis has been laid on physical understanding and pedagogical aspects of the subject. In addition to conventional machines, the book's extensive coverage also includes rigorous treatment of transformers (current, potential and welding transformers), special machines, AC/DC servomotors, linear induction motors, permanent magnet DC motors and application of thyristors in rotating machines. 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 understand the subject. The book covers all the aspects of Electrical Technology for undergraduate course. Various concepts of electrical engineering like power and energy measurement, tariff and power factor improvement, illumination, single phase and three phase transformers, single phase and three phase induction motors, alternators, d.c. machines, special purpose motors and solid state speed control of d.c. and a.c. drives are explained in the book with the help of comprehensive approach. The book starts with review of basic concepts of electrical engineering. Then it explains electrical power measurement methods and electrical energy measurement methods. The book also explains types of tariffs and power factor improvement methods. It includes all the details of illumination schemes. The book further explains single phase and three phase transformers. Then book provides the detailed discussion of three phase and single phase induction motors, d.c. generators and motors and synchronous generators. The discussion of special purpose motors such as servomotors, stepper motors and universal motor is also provided in support. Finally, the book incorporates the discussion of various power devices such as power diodes, SCR, DIAC, Triac, IGBT, Power MOSFETs and then continues to discuss the solid state speed control methods for d.c. and a.c. electrical drives. The book uses plain, simple and lucid language to explain each topic. The book provides the logical method of explaining the various complicated topics and stepwise methods to make the understanding easy. The variety of solved examples is the feature of this book. The book explains the philosophy of the subject which makes the understanding of the concepts very clear and makes the subject more interesting.

The importance of transformers and generators is well known in the various engineering fields. The book provides comprehensive coverage of the various types of transformers, d.c. generators and synchronous generators (alternators). The book starts with the brief review of single phase transformer. It continues to discuss no load and on load performance of transformers, phasor diagrams, equivalent circuit, voltage regulation and all day efficiency of transformer. The detailed discussion of open and short circuit tests and predetermination of regulation and efficiency is also included in the book. The chapter on three phase transformer provides the detailed discussion of construction, three phase transformer connections and phasor groups. The book also explains parallel operation of transformers, tap changing transformer, autotransformers, cooling of transformers and three winding transformer. The various testing methods of transformers are also incorporated in the book. The book covers all the details of d.c. generators including construction, armature reaction, commutation, characteristics and applications. The chapters on synchronous generators starts with the explanation of basics of synchronous generators including construction, winding details, e.m.f. equation and effect of harmonics on induced e.m.f. The book then explains the concept of armature reaction, phasor diagrams, regulation and various methods of finding the regulation of alternator. Stepwise explanation and simple techniques used to elaborate these methods is the feature of this book. The book further explains the concept of synchronization of alternators, two reaction theory and parallel operation of alternators. The book uses plain, lucid language to explain each topic. The book provides the logical method of explaining the various complicated topics and stepwise methods to make the understanding easy. Each chapter is well supported with necessary

illustrations, self explanatory diagrams and variety of solved problems. The book explains the philosophy of the subject which makes the understanding of the concepts very clear and makes the subject more interesting.

D. C. Circuit Concept of EMF, P.D. and current, Resistance, Effect of temperature of resistance, resistance-temperature co-efficient, Classification of electric network. Ohm's law, Kirchoff's law and their application for network solution, Simplification of network using series and parallel combination and star delta transformation. Magnetic Circuit Magnetic effect of electric current, Law of magnetic force, Magnetic field, Concept of mmf, Magnetic flux, Flux density, Reluctance permeability and field strength and their units. Cross and dot convention current, Simple series and parallel magnetic circuit, Comparison between electric circuit and magnetic circuit, Force on current carrying conductor in magnetic field, Fleming's rules. A. C.

Fundamentals Representation of an a.c. source polarity of a.c. source, Generation of a.c. voltage, Concept of instantaneous, Peak, Average and r.m.s values cycle, Period, Frequency, Peak factor and form factor phase difference, Phasor representation and indication of phase difference in it. Rectangular and polar representation of phasor. A.C.

Circuit Study of a.c. circuit consisting of purely resistive, Purely inductive, Purely capacitive type and corresponding voltage and current phasor diagram. Concept of reactance. Study of series and parallel circuit consisting resistance, Inductance and capacitance and its phasor, Combination of to develop the concept of impedance, Admittance, Conductance, Susceptance. Necessity of earthing, Its types, Fuses safety precaution in working with electricity, Circuit and operation of filament lamp.

Fluorescent tube, Mercury vapour, Sodium vapour lamp.

The job interview is probably the most important step you will take in your job search journey. Because it's always important to be prepared to respond effectively to the questions that employers typically ask at a job interview Petrogav International has prepared this eBooks that will help you to get a job in oil and gas industry. Since these questions are so common, hiring managers will expect you to be able to answer them smoothly and without hesitation. This eBook contains 273 questions and answers for job interview and as a BONUS web addresses to 230 video movies for a better understanding of the technological process. This course covers aspects like HSE, Process, Mechanical, Electrical and Instrumentation & Control that will enable you to apply for any position in the Oil and Gas Industry.

D.C. Machines Working principle of d.c. machines, constructional features, and types of d.c. machines, d.c. generator action, emf equation. Motoring action, torque equation for d.c. motor, characteristics of d.c. motor, back e.m.f. in d.c. motor, starters, conventional methods for speed control of d.c. motors. Electrical Power Measurement and

Illumination A) Measurement of active and reactive power in three phase balanced circuits by using one, two and three voltmeter methods; measurement of energy in three phase balanced circuits; Tariffs for LT and HT consumers (Descriptive treatment only); Power factor improvement. B) Illumination laws; different terms and factors used in context with illumination; requirement of good lighting scheme; industrial lighting, street lighting and flood lighting; design of a simple indoor lighting scheme. Synchronous Machines and Transformer A) Synchronous Machines Working principle, constructional features, emf equation, winding factors, synchronous speed of an alternator, concept of synchronous impedance, regulation of an alternator by synchronous impedance and

direct loading method. B) Transformers Equivalent circuit of a single phase transformer; open circuit and short circuit test to determine transformer efficiency, regulation and equivalent circuit; welding transformers, current transformers and potential transformers; three phase transformers; star / star, star / delta, delta/star, and delta / delta connections with concept of phasor group; study of typical distribution transformer substation. Three Phase Induction Motors Concept of rotating magnetic field ; working principle of three phase induction motors; constructional feature; types; torque equation; torque slip characteristics; torque ratios; power stages; efficiency; types of starters; conventional methods of speed control; braking and applications of these motors. Single Phase Motors & Special Purpose Machines Working principle, constructional features, applications and characteristics of: a) Single phase induction motors : Split phase and shaded pole types; b) Special purpose motors : Stepper motors, servomotors, hysteresis motors, reluctance motors, a.c. series motors, universal motors and synchronous motors. Electrical Drives, Heating and Welding a) Selection, ratings, applications and maintenance of electrical drives : 1. Selection - Factors to be considered, duty cycles, enclosures, class of insulation. 2. Ratings - Current rating, torque rating and temperature rating. 3. Applications - Typical industrial applications and meters suitable for different loads. 4. Maintenance - Maintenance of electrical equipment such as transformers and motors. b) Electrical heating and welding : 1. Resistance welding - Properties of good heating elements, heating element materials, design of simple heating elements with an application to ovens. 2. Induction heating - Principle and typical applications to core and coreless furnaces. 3. Dielectric heating - Principle and application to typical heating processes. 4. Resistance and arc welding - Principles and typical applications in industry.

The HVDC Light[trademark] method of transmitting electric power. Introduces students to an important new way of carrying power to remote locations. Revised, reformatted Instructor's Manual. Provides instructors with a tool that is much easier to read. Clear, practical approach.

The book is written for an undergraduate course on the 8086 microprocessor and 8051 microcontroller. It provides comprehensive coverage of the hardware and software aspects of 8086 microprocessor and 8051 microcontroller. The book is divided into three parts. The first part focuses on 8086 microprocessor. It teaches you the 8086 architecture, instruction set, Assembly Language Programming (ALP), interfacing 8086 with support chips, memory, and peripherals such as 8251, 8253, 8255, 8259, 8237 and 8279. It also explains the interfacing of 8086 with data converters - ADC and DAC and introduces a traffic light control system. The second part focuses on multiprogramming and multiprocessor configurations, numeric processor 8087, I/O processor 8089 and introduces features of advanced processors such as 80286, 80386, 80486 and Pentium processors. The third part focuses on 8051 microcontroller. It teaches you the 8051 architecture, instruction set, programming 8051 and interfacing 8051 with external memory. It explains timers/counters, serial port, interrupts of 8051 and their programming. It also describes the interfacing 8051 with data converters - ADC and DAC, keyboards, LCDs, LEDs, stepper motors, and sensors.

The importance of measuring instruments is well known in the various engineering fields. The book provides comprehensive coverage of various analog, electronic and digital instruments, d.c. and a.c. bridges, signal generators and analyzers, virtual

instrumentation and data acquisition system. The book starts with explaining the theory of measurement including characteristics of instruments, classification, standards, statistical analysis and limiting errors. Then the book explains the various analog and electronic instruments such as PMMC, moving iron, electro-dynamometer type, true RMS, Q-meter and sampling voltmeter. The book also includes the discussion of various d.c. and a.c. bridges along with necessary derivations and phasor diagrams. The book incorporates the detailed discussion of various types of oscilloscopes including simple, dual beam, dual trace, analog storage, sampling and digital oscilloscope. It also explains the various oscilloscope measurements and Lissajous figures. The book further explains the various signal generators and analyzers. It also covers the discussion of DAC, ADC, various digital instruments and data acquisition system. Finally the book provides the details of computer controlled systems, virtual instrumentation and fiber optic measurements. Each chapter starts with the background of the topic. Then it gives the conceptual knowledge about the topic dividing it in various sections and subsections. Each chapter provides the detailed explanation of the topic, practical examples and variety of solved problems. The book explains the philosophy of the subject which makes the understanding of the concepts very clear and makes the subject more interesting.

For over 15 years "Principles of Electrical Machines" is an ideal text for students who look to gain a current and clear understanding of the subject as all theories and concepts are explained with lucidity and clarity. Succinctly divided in 14 chapters, the book delves into important concepts of the subject which include Armature Reaction and Commutation, Single-phase Motors, Three-phase Induction motors, Synchronous Motors, Transformers and Alternators with the help of numerous figures and supporting chapter-end questions for retention.

The book is written for an undergraduate course on the Feedback Control Systems. It provides comprehensive explanation of theory and practice of control system engineering. It elaborates various aspects of time domain and frequency domain analysis and design of control systems. Each chapter starts with the background of the topic. Then it gives the conceptual knowledge about the topic dividing it in various sections and subsections. Each chapter provides the detailed explanation of the topic, practical examples and variety of solved problems. The explanations are given using very simple and lucid language. All the chapters are arranged in a specific sequence which helps to build the understanding of the subject in a logical fashion. The book starts with explaining the various types of control systems. Then it explains how to obtain the mathematical models of various types of systems such as electrical, mechanical, thermal and liquid level systems. Then the book includes good coverage of the block diagram and signal flow graph methods of representing the various systems and the reduction methods to obtain simple system from the analysis point of view. The book further illustrates the steady state and transient analysis of control systems. The book covers the fundamental knowledge of controllers used in practice to optimize the performance of the systems. The book emphasizes the detailed analysis of second order systems as these systems are common in practice and higher order systems can be approximated as second order systems. The book teaches the concept of stability and time domain stability analysis using Routh-Hurwitz method and root locus method. It further explains the fundamentals of frequency domain analysis of the systems

including co-relation between time domain and frequency domain. The book gives very simple techniques for stability analysis of the systems in the frequency domain, using Bode plot, Polar plot and Nyquist plot methods. It also explores the concepts of compensation and design of the control systems in time domain and frequency domain. The classical approach loses the importance of initial conditions in the systems. Thus, the book provides the detailed explanation of modern approach of analysis which is the state variable analysis of the systems including methods of finding the state transition matrix, solution of state equation and the concepts of controllability and observability. The variety of solved examples is the feature of this book which helps to inculcate the knowledge of the design and analysis of the control systems in the students. The book explains the philosophy of the subject which makes the understanding of the concepts very clear and makes the subject more interesting.

The job interview is probably the most important step you will take in your job search journey. Because it's always important to be prepared to respond effectively to the questions that employers typically ask at a job interview Petrogav International has prepared this eBooks that will help you to get a job in oil and gas industry. Since these questions are so common, hiring managers will expect you to be able to answer them smoothly and without hesitation. This eBook contains 200 questions and answers for job interview and as a BONUS web addresses to 230 video movies for a better understanding of the technological process. This course covers aspects like HSE, Process, Mechanical, Electrical and Instrumentation & Control that will enable you to apply for any position in the Oil and Gas Industry.

The importance of various electrical machines is well known in the various engineering fields. The book provides comprehensive coverage of the magnetic circuits, magnetic materials, single and three phase transformers and d.c. machines. The book is structured to cover the key aspects of the course Electrical Machines - I. The book starts with the explanation of basics of magnetic circuits, concepts of self and mutual inductances and important magnetic materials. Then it explains the fundamentals of single phase transformers including the construction, phasor diagram, equivalent circuit, losses, efficiency, methods of cooling, parallel operation and autotransformer. The chapter on three phase transformer provides the detailed discussion of construction, connections, phasor groups, parallel operation, tap changing transformer and three winding transformer. The various testing methods of transformers are also incorporated in the book. The book further explains the concept of electromechanical energy conversion including the discussion of singly and multiple excited systems. Then the book covers all the details of d.c. generators including construction, armature reaction, commutation, characteristics, parallel operation and applications. The book also includes the details of d.c. motors such as characteristics, types of starters, speed control methods, electric braking and permanent magnet d.c. motors. Finally, the book covers the various testing methods of d.c. machines including Swinburne's test, brake test, retardation test and Hopkinson's test. The book uses plain, lucid language to explain each topic. The book provides the logical method of explaining the various complicated topics and stepwise methods to make the understanding easy. Each chapter is well supported with necessary illustrations, self-explanatory diagrams and variety of solved problems. All the chapters are arranged in a proper sequence that permits each topic to build upon earlier studies. The book explains the philosophy of the

subject which makes the understanding of the concepts very clear and makes the subject more interesting.

The knowledge of switchgear and apparatus protection plays an important role in the power system. The book is structured to cover the key aspects of the course Switchgear & Protection for undergraduate students. The book starts with the discussion of basics of protective relaying. The book includes comprehensive coverage of faults and analysis of symmetrical and unsymmetrical faults. The book explains the protection against overvoltage, lightning arresters and power system earthing. The book covers the characteristics of various types of relays such as electromagnetic relays, induction type relays, directional relays, differential relays, thermal relays, frequency relays and negative sequence relays. The detailed discussion of distance relays and static relays is also included in the book. The book also covers the various possible faults and methods of protection of transformers, generators, motors, busbars and transmission lines. The book further explains the theory of circuit interruption and various arc interruption methods. Finally, the book incorporates various types of circuit breakers, circuit breaker ratings and testing of circuit breakers. The book uses plain and lucid language to explain each topic. The book provides the logical method of explaining the various complicated topics and stepwise methods to make the understanding easy. Each chapter is well supported with necessary illustrations and self-explanatory diagrams. The book explains the philosophy of the subject which makes the understanding of the concepts very clear and makes the subject more interesting.

Power semiconductor devices are discussed in first chapter. SCR, GTO, LASCR, RCT, MCT, characteristics, rating turn-off and turn-on is presented. Power BJT, MOSFET, IGBT, driving circuits, protection and snubber circuits are also discussed. Commutation circuits and series and parallel operation are presented. Single and three phase controlled converters are given in second chapter. Half wave, full wave, midpoint, semiconverters, full converters, dual converters and effect of source inductance is also given. Operation with resistive and inductive load is discussed. Third chapter presents AC voltage controllers and cycloconverters. On-off control, phase control, triac based controllers are given. Cycloconverters and operations with inductive as well as resistive load are discussed. Choppers are given in fourth chapter. Step down, step up, voltage, current and load commutated choppers are given. Classification is also discussed. Last chapter presents inverters. Half bridge, full bridge, quasi square wave, push-pull, thyristorized inverters with resistive and inductive loads are given. Switching techniques for PWM inverters are also given.

Traditionally, electrical machines are classified into d. c. commutator (brushed) machines, induction (asynchronous) machines and synchronous machines. These three types of electrical machines are still regarded in many academic curricula as fundamental types, despite that d. c. brushed machines (except small machines) have been gradually abandoned and PM brushless machines (PMBM) and switched reluctance machines (SRM) have been in mass production and use for at least two decades. Recently, new topologies of high torque density motors, high speed motors, integrated motor drives and special motors have been developed. Progress in electric machines technology is stimulated by new

materials, new areas of applications, impact of power electronics, need for energy saving and new technological challenges. The development of electric machines in the next few years will mostly be stimulated by computer hardware, residential and public applications and transportation systems (land, sea and air). At many Universities teaching and research strategy oriented towards electrical machinery is not up to date and has not been changed in some countries almost since the end of the WWII. In spite of many excellent academic research achievements, the academia–industry collaboration and technology transfer are underestimated or, quite often, neglected. Underestimation of the role of industry, unfamiliarity with new trends and restraint from technology transfer results, with time, in lack of external financial support and drastic decline in the number of students interested in Power Electrical Engineering.

The importance of electric motors is well known in the various engineering fields. The book provides comprehensive coverage of the various types of electric motors including d.c. motors, three phase and single phase induction motors, synchronous motors, universal motor, a.c. servomotor, linear induction motor and stepper motors. The book covers all the details of d.c. motors including torque equation, back e.m.f., characteristics, types of starters, speed control methods and applications. The book also covers the various testing methods of d.c. motors such as Swinburne's test, brake test, retardation test, field test and Hopkinson's test. The book further explains the three phase induction motors in detail. It includes the production of rotating magnetic field, construction, working, effect of slip, torque equation, torque ratios, torque-slip characteristics, losses, power flow, equivalent circuit, effect of harmonics on the performance, circle diagram and applications. This chapter also includes the discussion of induction generator. The book teaches the various starting methods and speed control methods of three phase induction motors. The book incorporates the explanation of various single phase induction motors. The chapter on synchronous motor provides the detailed discussion of construction, working principle, behavior on load, analysis of phasor diagram, Vee and Inverted Vee curves, hunting, synchronous condenser and applications. The book also teaches the various special machines such as single phase commutator motors, universal motor, a.c. servomotor, linear induction motor and stepper motors. The book uses plain, lucid language to explain each topic. The book provides the logical method of explaining the various complicated topics and stepwise methods to make the understanding easy. Each chapter is well supported with necessary illustrations, self explanatory diagrams and variety of solved problems. The book explains the philosophy of the subject which makes the understanding of the concepts very clear and makes the subject more interesting.

This sigma Series book on Electric Machines deals with the fundamentals of the subject through problem solving technique and provides innumerable solved, unsolved problems along with review and objective type questions. Features Complete coverage of fundamentals of electrical machines. Emphasis is placed

on the basic concepts, theorems, and problem-solving techniques. Each chapter begins with brief theoretical explanation needed for solving the related problems. 1640 problems given in the book.

Retaining the user-friendly style of the First Edition, the Second Edition of this unique book provides detailed information on the application and safe operation of motors, generators, and transformers at the Technology Level, and includes examples in the use of NEMA and NEC Standards. With an emphasis on current industrial standards, this book presents AC machines and transformers before DC machines, motors before generators, gives more attention to machine characteristics, and makes extensive use of NEMA standards and tables. For Applications Engineers, Electrical Engineers, Maintenance Engineers, Marine Engineers, Mechanical Engineers, Nuclear Engineers, Operating Engineers, and Petroleum Engineers, who want an easy-to-understand, yet detailed explanation of the current industrial standards in the field of Electronics.

The job interview is probably the most important step you will take in your job search journey. Because it's always important to be prepared to respond effectively to the questions that employers typically ask at a job interview Petrogav International has prepared this eBooks that will help you to get a job in oil and gas industry. Since these questions are so common, hiring managers will expect you to be able to answer them smoothly and without hesitation. This eBook contains 273 questions and answers for job interview and as a BONUS 230 links to video movies. This course covers aspects like HSE, Process, Mechanical, Electrical and Instrumentation & Control that will enable you to apply for any position in the Oil and Gas Industry.

The importance of various electrical machines is well known in the various engineering fields. The book provides comprehensive coverage of the synchronous generators (alternators), synchronous motors, three phase and single phase induction motors and various special machines. The book is structured to cover the key aspects of the course Electrical Machines - II. The book starts with the explanation of basics of synchronous generators including construction, winding details and e.m.f. equation. The book then explains the concept of armature reaction, phasor diagrams, regulation and various methods of finding the regulation of alternator. Stepwise explanation and simple techniques used to elaborate these methods is the feature of this book. The book further explains the concept of synchronization of alternators, two reaction theory and parallel operation of alternators. The chapter on synchronous motor provides the detailed discussion of construction, working principle, behavior on load, analysis of phasor diagram, Vee and Inverted Vee curves, hunting and applications. The book further explains the three phase induction motors in detail. It includes the construction, working, effect of slip, torque equation, torque ratios, torque-slip characteristics, losses, power flow, equivalent circuit, effect of harmonics on the performance and applications. This chapter includes the discussion of induction generator and synchronous induction motor. The detailed

discussion of circle diagram is also included in the book. The book teaches the various starting methods, speed control methods and electrical braking methods of three phase induction motors. Finally, the book gives the explanation of various single phase induction motors and special machines such as reluctance motor, hysteresis motor, repulsion motor, servomotors and stepper motors. The discussion of magnetic levitation is also incorporated in the book. The book uses plain, lucid language to explain each topic. The book provides the logical method of explaining the various complicated topics and stepwise methods to make the understanding easy. Each chapter is well supported with necessary illustrations, self explanatory diagrams and variety of solved problems. The book explains the philosophy of the subject which makes the understanding of the concepts very clear and makes the subject more interesting.

The importance of measuring instruments is well known in the various engineering fields. The book provides comprehensive coverage of various electrical and digital measuring instruments. The book starts with explaining the classification and requirements of a measuring instrument. Then the book explains the PMMC and moving iron instruments. Extension of range of instruments using shunts and multipliers is also included in the book. The book includes detailed discussion of instrument transformers and power factor meters. The book covers the types of wattmeters, errors and compensations and two wattmeter method. The chapter on energy measurement includes discussion of energy meters, errors and compensations, calibration, phantom loading, trivector meter and Merz price maximum demand indicator. The book teaches the details of d.c. and a.c. potentiometers along with their applications. The book further explains various d.c. and a.c. bridges along with necessary derivations and phasor diagrams. It also includes the discussion of various magnetic measurements. Finally, the book includes the discussion of various digital meters such as digital voltmeters, digital multimeter, digital frequency meter and digital tachometer along with the automation in digital instruments. Each chapter gives the conceptual knowledge about the topic dividing it in various sections and subsections. Each chapter provides the detailed explanation of the topic, practical examples and variety of solved problems. The book explains the philosophy of the subject which makes the understanding of the concepts very clear and makes the subject more interesting.

The importance of electronic measuring instruments and transducers is well known in the various engineering fields. The book provides comprehensive coverage of various electronic measuring instruments, transducers, data acquisition system, oscilloscopes and measurement of physical parameters. The book starts with explaining the theory of measurement including characteristics of instruments, classification, statistical analysis and limiting errors. Then the book explains the various analog and digital instruments such as average and true rms responding voltmeters, chopper and sampling voltmeter, types of digital voltmeters, multimeter and ohmmeter. It also includes the discussion of high

frequency impedance measurement. The book further explains types of signal generators and various signal analyzers such as wave analyzer, logic analyzer, distortion analyzer and power analyzer. The book teaches various d.c. and a.c. bridges along with necessary derivations and phasor diagrams. The book incorporates the discussion of various types of conventional and special purpose oscilloscopes. The book includes the discussion of time and frequency measurement and types of recorders. The chapter on transducers is dedicated to the detailed discussion of various types of transducers. The book also includes the measurement of various physical parameters such as flow, displacement, velocity, force, pressure and torque. Finally, it incorporates the discussion of data acquisition system. Each chapter gives the conceptual knowledge about the topic dividing it in various sections and subsections. Each chapter provides the detailed explanation of the topic, practical examples and variety of solved problems. The book explains the philosophy of the subject which makes the understanding of the concepts very clear and makes the subject more interesting. Electrical Machine Design caters to the requirements of undergraduate and postgraduate students of electrical engineering and industry novices. The authors have adopted a flow chart based approach to explain the subject. This enables an in-depth understanding of the design of different types of electrical machines with an appropriate introduction to basic design considerations and the magnetic circuits involved. The book aids students to prepare for various competitive exams through objective questions, worked-out examples and review questions in increasing order of difficulty. MATLAB and C programs and Finite Element simulations using Motor Solve, featured in the text offers a profound new perspective in understanding of automated design of electrical machines. About the Book: Electrical power system together with Generation, Distribution and utilization of Electrical Energy by the same author cover almost six to seven courses offered by various universities under Electrical and Electronics Engineering curriculum. Also, this combination has proved highly successful for writing competitive examinations viz. UPSC, NTPC, National Power Grid, NHPC, etc.

Electrical Machines - I Technical Publications

This book is written so that it serves as a text book for B.E./B.Tech degree students in general and for the institutions where AICTE model curriculum has been adopted. TOPICS COVERED IN THIS BOOK:- Magnetic field and Magnetic circuit Electromagnetic force and torque D.C. Machines D.C. Machines-Motoring and Generation SALIENT FEATURES:- Self-contained, self-explanatory and simple to follow text. Numerous worked out examples. Well Explained theory parts with illustrations. Exercises, objective type question with answers at the end of each chapter.

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