

Viva Second Edition Lab Manual Answers

An important dictum of learning is that theoretical learning must always be supplemented by practical learning. This ensures proper understanding and comprehension besides better retention. It eliminates the phobia and makes learning fun. With this in mind the concept of activities in mathematics was introduced. This series of books caters to the above requirement. It is a sincere effort to sharpen the intellect through activity oriented learning to acquire mathematical skills and develop logical reasoning. The ebook version does not contain CD.

Lab Manual

- Strictly as per the new term wise syllabus for Board Examinations to be held in the academic session 2021-22 for class 10
- Multiple Choice Questions based on new typologies introduced by the board- I. Stand- Alone MCQs, II. MCQs based on Assertion-Reason III. Case-based MCQs.
- Include Questions from CBSE official Question Bank released in April 2021
- Answer key with Explanations

Highly Useful for Various Engineering and Medical Competitive Examinations.

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

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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

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Applied Electronics) • BSc/MSc (Physics) • Diploma (Engineering)

EXPERIMENTS 1.Measurement of Length 1.To measure the diameter of a small spherical/cylindrical body by using a vernier callipers, 2. To measure the dimensions of a given regular body of known mass, using vernier callipers and hence find its density, 3. To measure the internal diameter and depth of a given cylindrical vessel (say calorimeter/beaker) by using vernier callipers and hence find its internal volume (i.e., capacity) Viva-voce 2. Screw Gauge/Micrometer 4.To determine the diameter of a given wire using a screw gauge and find its volume, 5. To find the thickness of a given sheet with the help of screw gauge, 6.To measure the volume of an irregular lamina by using a screw gauge Viva-voce 3. Spherometer 7.To measure the radius of curvature of a given spherical surface (convex lens) by using a spherometer Viva-voce 4.Mass and Weight 8.To determine the mass of two different objects using a beam balance Viva-voce 5.Parallelogram Law of Vectors 9.To find the weight of a given body using parallelogram law of vectors Viva-voce 6.Simple Pendulum (Measurement of Time) 10.Using a simple pendulum, plot $L-T$ and $L-T^2$ graphs. Hence find the effective length of a second's pendulum, using appropriate graphs Viva-voce 7. Friction 11.To study the relationship between force of limiting friction and normal reaction and to find the coefficient of friction

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between a block and a horizontal surface, Viva-voce 8. Motion of a Body Along an Inclined Plane 12. To find the downward force along an inclined plane, acting on a roller due to gravitational pull of the earth and study its relationship with the angle of inclination by plotting graph between force and \sin Viva-voce

SECTION : B EXPERIMENTS 1.Elasticity 1.To determine the Young's modulus of elasticity of the material of the wire, using Searle's apparatus Viva-voce 2.Spring Constant 2.To find the spring constant of a helical spring by plotting load-extension graph Viva-voce 3. Boyle's Gas Law 3.To study the variation in volume with pressure for a sample of air constant temperature by plotting graphs between P and V and between P and $1/V$ 18 Viva-voce 4. Surface Tension 4.To determine the surface tension of water by capillary rise method Viva-voce 5.Viscosity 5.To determine the co-effective of viscosity of given liquid by measuring the terminal velocity of a given spherical body in it Viva-voce 6.Newton's Law of Cooling 6.To study the relationship between temperature of a hot body and time by plotting a cooling curv Viva-voce 7.Vibrations of Strings 7. To study the relation between frequency and length for a given wire under constant tension using a sonometer Viva-voce 8.To study the relation between the length of a given wire and tension for constant frequency using sonometer Viva-voce 8.Vibrations of Air Columns 9.To find the velocity of

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sound in air at room temperature using a resonance tube by two resonance position Viva-voce 9. Specific Heat 10. To determine specific heat of a given solid by the method of mixture 11. To determine the specific heat of a given liquid by method of mixture Viva-voce

SECTION : A ACTIVITIES 1. To make a paper scale of given least count e.g., 0.2 cm, 0.5 cm and use it to measure the length of a given object.

2. To determine the mass of a given body using a metre scale and by applying principle of moments. Viva-voce

3. To plot a graph for a given set of data using proper choice of scales and error bars. Viva-voce

4. To measure the force of limiting friction for rolling of a roller on horizontal plane. Viva-voce 5. To study the variation in the range of a jet of water with angle of projection. Viva-voce

6. To study the conservation of energy of a ball rolling down on inclined plane (using a double inclined plane). Viva-voce

7. To study dissipation of energy of a simple pendulum by plotting a graph between square of amplitude and time. Viva-voce SECTION : B

ACTIVITIES 1. To observe the change of the state and plot a cooling curve for molten wax. Viva-voce

2. To observe and explain the effect of heating on a bimetallic strip. Viva-voce

3. To note the change in level of liquid in a container on heating and interpret the observations. Viva-voce 4. To study the effect of detergent in surface tension by observing capillary rise. Viva-voce 5. To study the factors affecting the

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rate of loss of heat of a liquid. Viva-voce 6. To study the effect of load on depression of a suitably clamped meter scale loaded (i) at its end (ii) in the middle. Viva-voce 7. To observe the decrease in pressure with the increase in velocity of the fluid.

Viva-voce APPENDIX Some Important Tables of Physical Constants Log-Antilog and other Tables

- Strictly as per the new term wise syllabus for Board Examinations to be held in the academic session 2021-22 for classes 11 & 12
- Multiple Choice Questions based on new typologies introduced by the board- I. Stand- Alone MCQs, II. MCQs based on Assertion-Reason III. Case-based MCQs.
- Revision Notes for in-depth study
- Mind Maps & Mnemonics for quick learning
- Include Questions from CBSE official Question Bank released in April 2021
- Answer key with Explanations
- Concept videos for blended learning (science & maths only)

Expanded and updated to reflect the most recent changes in the viva examination

A popular book in its first edition, *The Food Chemistry Laboratory: A Manual for Experimental Foods, Dietetics, and Food Scientists*, Second Edition continues to provide students with practical knowledge of the fundamentals of designing, executing, and reporting the results of a research project. Presenting experiments that can be completed, in many

Lab Manuals

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Goyal Brothers Prakashan

ICSE-Lab Manual Biology-TB-10

ICSE-Lab Manual Physics-TB-10

Introduction EXPERIMENTS 1.To study pollen germination on slide, 2. To study the texture moisture content pH and water Holding Capacity of soils collected from different sites, 3.To collect water from different water bodies and study them for pH Clarity and presence of living organisms, 4. To study the presence of suspended particulate matter in air at different sites. 5.To study plant population density by quadrat method. 6.To study plant population frequency by quadrat method. 7.To study various stages of mitosis in root tip of onion by preparing slide in acetocarmine. 8. To study effect of different temperature and three different pH on the activity of salivary amylase. 9. To study the isolation of DNA from available plant material such as spinach green pea,seeds, papaya etc. SPOTTING 1. Pollination in flowers. 2. Pollen germination. 3. Slides of mammal tissues, 4. Meiosis cell division. 5.T. S. of Blastula, 6.Mendel's inheritance laws.7.Pedigree chart. 8.Controlled pollination, 9. Common diseases, causing organisms, 10. Xerophytic adaptation, 11.Aquatic adaptation. VIVA-VOCE

This manual presents 31 laboratory-tested experiments in hydraulics and hydraulic machines. This manual is organized into two parts. The first part equips the student with the basics of fluid

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properties, flow properties, various flow measuring devices and fundamentals of hydraulic machines. The second part presents experiments to help students understand the basic concepts, the phenomenon of flow through pipes and flow through open channels, and the working principles of hydraulic machines. For each experiment, the apparatus required for conducting the experiment, the probable experimental set-up, the theory behind the experiment, the experimental procedure, and the method of presenting the experimental data are all explained. Viva questions (with answers) are also given. In addition, the errors arising during recording of observations, and various precautions to be taken during experimentation are explained with each experiment. The manual is primarily designed for the undergraduate degree students and diploma students of civil engineering, mechanical engineering and chemical engineering.

The present book 'Comprehensive Laboratory Manual of Life Science', deals with practical trends in modern biological sciences. It furnishes protocols on recent advances in biotechnological methods and aims to cover three most important aspects of this interdisciplinary stream; such as Microbiology, Biochemistry and Molecular biology. The book contains four sections: 1. Introduction: emphasizes on good laboratory practices and etiquettes for beginners; the do's and don'ts of working in a

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laboratory, concepts and terminology, etc. 2. Instruments: Principle and Precautions: explores commonly used equipments employed in different experiments. 3. Experiments: is further divided into three parts: Microbiology with more than 70 experiments, Biochemistry with 62 and Molecular Biology having around 32 detailed protocols, accorded to make the readers proficient in the paramount disciplines of Bio Sciences and Biotechnology. 4. Appendix: at the end, a rather comprehensive section that concludes the book. This book is designed to meet the practical requirements of undergraduate and post graduate students of Life Science, Biotechnology, Microbiology, Biochemistry and Biochemical Engineering by providing worked out solution to the most commonly practiced experiments prescribed by majority of Indian Universities. The latest technological developments in the book will be appealing to the researchers and scientists. Over the most recent couple of years, the importance of undergraduate technical education has grown amid a huge industrial revolution in our country. More refined and recently discovered super-specific topics are being introduced instead of old ones while modifying the course curriculum. In the new course curriculum, more noteworthy accentuation is laid on the basic science subjects and, on the need, to develop in-depth knowledge about the fundamentals of any particular area

