

Class 9 Science Ncert Lab Manual By Apc Publication

NCERT Exemplar Problem-Solutions These include Practice questions of various typologies and difficulty levels. They also contain conceptual problems which are a part of the CBSE Board Syllabus as well as the Syllabus of various Competitive Exams like IIT JEE, NEET, AIIMS, etc. These are based on the latest NCERT Exemplar Editions They have Oswaal Learning Tools for effective concept clarification CBSE Pullout Worksheet Chapter-wise worksheets with space for writing answers Latest Typology of Questions mentioned by CBSE, including MCQs Objective Type Questions for 2021 Examination Previous Years' Questions for exam oriented preparation Free Solutions available on our website www.oswaalbooks.com

"• Engage- Introduce interesting content enabling better assimilation of concepts • Explore- Provide meaningful insights into various typologies and methodologies for effective exam preparation • Explain- Give better clarification for concepts and theories • Elaborate- Complement studying with ample examples and Oswaal exam tools • Evaluate- Conclude with Effective self assessment tools"

Oswaal worksheets strictly follow the CBSE Syllabus and include the following: • Chapter-wise worksheets with space for writing answers • Latest Typology of Questions mentioned by CBSE • Objective Type Questions for 2021 Examination • Previous Years' Questions for exam oriented preparation • Free Solutions available on our website www.oswaalbooks.com Self-Study Mode Chapter-wise Questions to facilitate focused study and practice Exam Preparatory Material Previous Years' Questions for exam oriented preparation Best Practice Tool Every worksheet contains a mix of questions, for which the maximum marks and time are mentioned to facilitate practice. Latest CBSE Curriculum Strictly based on the latest CBSE curriculum issued for Academic Year 2020-2021, following the latest NCERT Textbook. Latest Typology OF Questions Latest Typologies of Questions like Multiple Choice Questions, Tabular based Questions, Passage based Questions, Picture based Questions, Fill in the Blanks, Match the Following, etc. have been exclusively developed by the Oswaal Editorial Board and included in our Question Banks. Answers available on www.oswaalbooks.com 'Free Solutions available for all the worksheets on our website www.oswaalbooks.com

"• It is strictly according to the latest CBSE guidelines

- It contains all NCERT Lab Manual Questions, fully solved

- It contains more than sufficient viva voce questions for practice

- It also includes brief description of each activity/experiment, which will help students in practicing and completing their lab work. "

1) Oswaal CBSE MCQ Question Banks for Term 1 & 2 include Multiple Choice Questions based on the latest typologies introduced by the board like: Stand- Alone MCQs, MCQs based on Assertion-Reason Case-based MCQs. 2) Oswaal CBSE MCQ Question Banks Class 10 are strictly as per the "Special Assessment Scheme" issued by the Board on July 5 2021 for Board Examination -2021-22. 3) Oswaal CBSE MCQ Question Banks 2021-22 Class 10 include Questions from CBSE official Question Bank released in April 2021. 4) Oswaal CBSE MCQ Question Banks Class 10 include Answers with Explanations & also Unit-wise Periodic Tests for practice.

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Year after year CBSE has been introducing changes in the curriculum of various classes. We, at Oswaal Books, closely follow every change made by the Board and endeavor to equip every student with the latest study material to prepare for the Final Examinations. The latest offering from us are these Worksheets. They are entirely based on the Latest Syllabus & Question Paper Design issued by the Board on 1 April 2020 for Academic Year 2020-2021.

Physics : 1.To determine the focal length of concave mirror, 2. To find the focal length of convex lens by two pin method, 3. To find the image distance for varying object distances in case of a convex lens and drawing corresponding ray diagrams to show the nature of image formed, 4.To trace the path of the rays of light through a glass prism, 5.To trace the path of a ray of light passing through a rectangular glass slab for difference angles of incidence. 6.To study the dependence of potential difference (V) across a resistor on the current (I) passing through it and determine its resistance. Also plotting a graph between V and I.7.To determine the equivalent resistance of two resistors when connected in series and parallel Chemistry : 8.To find the pH of the following samples by using pH paper universal indicator, 9.To studying the properties of a base (dil. NaOH Solution) and Acid (HCl) by their reaction with : (a) Litmus solution (Blue/Red),

(b) Zinc metal, (c) Solid sodium carbonate, 10. To perform and observe the following reactions and to classify them into (a) Combination reaction, (b) Decomposition reaction, (c) Displacement reaction, (d) Double displacement reaction : (i) Action of water on quick lime, (ii) Action of heat on ferrous sulphate crystals, (iii) Iron nails kept in copper sulphate solution, (iv) Reaction between sodium sulphate and barium chloride solutions. 11. To observe the action of Zn, Fe, Cu and Al on the following salt solutions : (a) $ZnSO_4$ (aq.), (b) $FeSO_4$ (aq.), (c) $CuSO_4$ (aq.), (d) $Al_2(SO_4)_3$ (aq.). Based on the above result to arrange Zn, Fe, Cu and Al (metals) in the decreasing order of reactivity, 12. To study the following properties of acetic acid (ethanoic acid) : (i) Odour, (ii) Solubility in water, (iii) Effect on litmus, (iv) Reaction with sodium hydrogen carbonate. 13. To study the comparative cleaning capacity of a sample of soap in soft and hard water. Biology : 14. To study stomata by preparing a temporary mount of a leaf peel. 15. To show experimentally that carbon dioxide (CO_2) is given out during aerobic respiration, 16. To study (A) Binary fission in Amoeba and (B) Budding in yeast with the help of prepared slides, 17. To identify the different parts of an embryo of a dicot seed (pea, gram or red kidney beans.)

ICSE-Lab Manual Biology-TB-09

These Lab Manuals provide complete information on all the experiments listed in the latest CBSE syllabus. The various objectives, materials required, procedures, inferences, etc., have been given in a step-by-step manner. Carefully framed MCQs and short answers type questions given at the end of the experiments help the students prepare for viva voce.

The second volume of this book includes selected high-quality research papers presented at the Fourth International Congress on Information and Communication Technology, which was held at Brunel University, London, on February 27–28, 2019. It discusses emerging topics pertaining to information and communication technology (ICT) for managerial applications, e-governance, e-agriculture, e-education and computing technologies, the Internet of Things (IoT), and e-mining. Written by respected experts and researchers actively working in ICT, the book offers a valuable resource, especially for researchers who are newcomers to the field.

Oswaal Books latest offering ONE for ALL is going to break down the actual studying strategies for success and empower the students with the 5 E's of Learning-Engage- Introduce interesting content enabling better assimilation of concepts. Explore- Provide meaningful insights into various typologies and methodologies for effective exam preparation. Explain- Give better clarification for concepts and theories. Elaborate- Complement studying with ample examples and Oswaal exam tools. Evaluate- Conclude with Effective self-assessment tools Oswaal ONE for ALL, as the name suggests is an All in One package for Class 10. for Excellence. It recognizes the need of students to not only get exam oriented study material for success but also to save time and energy by having all the content in one place, thus an All in One package for Class 9

"· Chapter-wise/ Topic-wise presentation for systematic and methodical study · Strictly based on the Reduced CBSE Curriculum issued for Academic Year 2020-2021, following the latest NCERT Textbook and Exemplar · Previous Years' Question Papers with Marking Scheme & Toppers' Answers for exam-oriented study · Remembering, Understanding, Application, Analysing & Evaluation and Creation Based Question based on Bloom's Taxonomy for cognitive skills development · Latest Typologies of Questions developed by Oswaal Editorial Board included · Mind Maps in each chapter for making learning simple · 'Most likely Questions' generated by Oswaal Editorial Board with 100+ years of teaching experience · Suggested videos at the end of each chapter for a Hybrid Learning Experience"

Physics : 1. To determine the focal length of concave mirror, 2. To find the focal length of convex lens by two pin method, 3. To find the image distance for varying object distances in case of a convex lens and drawing corresponding ray diagrams to show the nature of image formed, 4. To trace the path of the rays of light through a glass prism, 5. To trace the path of a ray of light passing through a rectangular glass slab for different angles of incidence. 6. To study the dependence of potential difference (V) across a resistor on the current (I) passing through it and determine its resistance. Also plotting a graph between V and I. 7. To determine the equivalent resistance of two resistors when connected in series and parallel Chemistry : 8. To find the pH of the following samples by using pH paper universal indicator, 9. To study the properties of a base (dil. NaOH Solution) and Acid (HCl) by their reaction with : (a) Litmus solution (Blue/Red), (b) Zinc metal, (c) Solid sodium carbonate, 10. To perform and observe the following reactions and to classify them into (a) Combination reaction, (b) Decomposition reaction, (c) Displacement reaction, (d) Double displacement reaction : (i) Action of water on quick lime, (ii) Action of heat on ferrous sulphate crystals, (iii) Iron nails kept in copper sulphate solution, (iv) Reaction between sodium sulphate and barium chloride solutions. 11. To observe the action of Zn, Fe, Cu and Al on the following salt solutions : (a) $ZnSO_4$ (aq.), (b) $FeSO_4$ (aq.), (c) $CuSO_4$ (aq.), (d) $Al_2(SO_4)_3$ (aq.). Based on the above result to arrange Zn, Fe, Cu and Al (metals) in the decreasing order of reactivity, 12. To study the following properties of acetic acid (ethanoic acid) : (i) Odour, (ii) Solubility in water, (iii) Effect on litmus, (iv) Reaction with sodium hydrogen carbonate. 13. To study the comparative cleaning capacity of a sample of soap in soft and hard water. Biology : 14. To study stomata by preparing a temporary mount of a leaf peel. 15. To show experimentally that carbon dioxide (CO_2) is given out during aerobic respiration, 16. To study (A) Binary fission in Amoeba and (B) Budding in yeast with the help of prepared slides, 17. To identify the different parts of an embryo of a dicot seed (pea, gram or red kidney beans.)

NCERT Problems Solutions Textbook-Exemplar Chapter wise & Topic wise presentation for ease of learning Quick Review for in depth study Mind maps for clarity of concepts All MCQs with explanation against the correct option Some important questions developed by 'Oswaal Panel' of experts Previous Year's Questions Fully Solved Complete Latest NCERT Textbook & Intext Questions Fully Solved Quick Response (QR Codes) for Quick Revision on your Mobile Phones / Tablets Expert Advice how to score more suggestion and ideas shared CBSE Pullout Worksheet Chapter-wise worksheets with space for writing answers Latest Typology of Questions mentioned by CBSE, including MCQs Objective Type Questions for 2021 Examination Previous Years' Questions for exam oriented preparation Free Solutions available on our website www.oswaalbooks.com

"Solved Board Examination Paper 2020 • Latest Board Sample Paper • Revision Notes • Based on the Latest CBSE Syllabus released on 22th July 2021 • Commonly Made Errors & Answering Tips • Most Likely Questions (AI) for 2022 Board Exams"

Some Special Features of Oswaal NCERT Solutions are: • Chapter-wise & Topic-wise presentation • Chapter Objectives-A sneak peek into the chapter • Mind Map: A single page snapshot of the entire chapter • Quick Review: Concept-based study material • Tips & Tricks: Useful guidelines for attempting each question perfectly • Some Commonly Made Errors: Most common and unidentified errors made by students discussed • Expert Advice - Oswaal Expert Advice on how to score more! • Oswaal QR Codes- For Quick Revision on your Mobile Phones & Tablets • All MCQs with explanation against the correct option • Some important questions developed by 'Oswaal Panel' of experts

Comp-Information Technology-TB-09-R

Lab Manual

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interesting content enabling better assimilation of concepts • Explore- Provide meaningful insights into various typologies and methodologies for effective exam preparation • Explain- Give better clarification for concepts and theories • Elaborate- Complement studying with ample examples and Oswaal exam tools • Evaluate- Conclude with Effective self-assessment tools Latest & Reduced CBSE Curriculum Strictly based on the latest & Reduced CBSE curriculum issued for Academic Year 2020-2021, following the latest NCERT Textbook & NCERT Exemplar in case of Maths & Science subjects. Follows the Latest NEP 2020 Guidelines One for All has moved away from solely rote learning of facts towards more imaginative and flexible learning structures Latest Typologies of Questions as per CBSE Latest Typologies like; MCQs, Tubulars', Passages, Picture based questions, Fill in the blanks, Match the following, etc. have been included in each chapter

engage- introduce interesting content enabling better assimilation of concepts explore- provide meaningful insights into various typologies and methodologies for effective exam preparation explain- give better clarification for concepts and theories elaborate- complement studying with ample examples and Oswaal exam tools evaluate- conclude with effective self assessment tools

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ICSE-Lab Manual Physics-TB-09

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