

LABORATORY MANUAL

Class XI

CHEMISTRY



Ncert Cbse Practical Lab Manual Class 11

**National Council of Educational
Research and Training (India)**



Ncert Cbse Practical Lab Manual Class 11:

Practical/Laboratory Manual Biology Class XI based on NCERT guidelines by Dr. Sunita Bhagia & Megha

Bansal Dr. Sunita Bhagia ,Megha Bansal,2020-06-23 An Excellent Book in Accordance with the latest syllabus for Class 11 Prescribed by CBSE NCERT and Adopted by Various State Education Boards

Introduction

- 1 Necessary equipments chemicals and other things for practical work
- 2 General Instructions for practical work
- 3 Special Instructions for practical note book Drawing and Recording
- 4 Special Instructions for spotting

EXPERIMENTS

- 1 To study and describe the flowering plant belonging to family one from each of the families a Solanaceae b Fabaceae c Liliaceae
- 2 To prepare temporary slide of transverse section of dicot monocot stem dicot monocot root
- 3 To study osmosis by potato osmometer
- 4 To study of plasmolysis in epidermal peel of Tradescantial or Rhoeo leaf
- 5 To study the distribution of stomata on the upper and lower surface of a leaf
- 6 To compare the rate of transpiration in upper and lower surface of the leaf
- 7 To test the presence of sugars Glucose Sucrose and Starch proteins and fats and to detect their presence in suitable plant and animal materials
- 8 To study the separation of plant pigments by paper chromatography
- 9 To study the rate of respiration in flower buds leaf tissue and germinating seeds
- 10A To test presence of urea in urine
- 10B To test presence of sugar in urine
- 10C To detect presence of albumin in urine
- 10D To test urine for presence of bile salt

SPOTTING

- 1 Study of compound microscope
- 2 To study the plant specimen and identification with reasons Bacteria Oscillatoria Spirogyra Rhizopus Mushroom Yeast Liverwort Moss Fern Pine One Monocotyledonous plant One dicotyledonous plant and one Lichen
- 3 Study of animal specimens

- 1 Amoeba
- 2 Hydra
- 3 Fasciola Hepatica Liver fluke
- 4 Ascaris Lumbricoides
- 5 Hirudinaria Granulosa
- 6 Pheretima Posthuma
- 7 Palaemon
- 8 Bombyx Mori
- 9 Apis Indica Honeybee
- 10 Pila Globasa Snail
- 11 Asterias Starfish
- 12 Scoliodon Dogfish
- 13 Labeo Rohita Rohu
- 14 Rana Tigrina Frog
- 15 Hemidactylus Lizard
- 16 Columba Livia Pigeon
- 17 Orytolagus Cuniculus Rabbit

4A To study the plant tissues Palisade cells Guard cells Parenchyma Collenchyma Sclerenchyma Xylem and Phloem through prepared slide

4B To study the animal tissue squamous epithelium muscles fibres through prepared slide

4C To study mammalian blood smear by temporary permanent slide

- 5 Study of mitosis in root tip of onion
- 6 Study of different modification in root stem and leaves
- 7 To study and identify different types of inflorescence Racemose and Cymose
- 8 To study imbibition in seed raisins
- 9 To demonstrate that anaerobic respiration take place in the absence of air
- 10 To study human skeleton and joints
- 11 To study the external features of cockroach with help of model or chart

Science Lab Manual Class IX | As per the latest CBSE syllabus and other State Board following the curriculum of CBSE. Mr. Gopi Chandra Gupta,Mr. Shivam Tiwari,2022-08-01

With the NEP and expansion of research and knowledge has changed the face of education to a great extent In the Modern times education is not just constricted top the lecture method but also includes a practical knowledge of certain subjects This way of education helps a student to grasp the basic concepts and principles Thus trying to break the stereotype that subjects like Mathematics and Science means studying lengthy formulas complex structures and handling

complicated instruments we are trying to make education easy fun and enjoyable **Science Lab Manual Class X | follows the latest CBSE syllabus and other State Board following the CBSE Curriculum.** Mr. Gopi Chandra Gupta, Mr. Shivam Tiwari, 2022-08-04 With the NEP and expansion of research and knowledge has changed the face of education to a great extent In the Modern times education is not just constricted to the lecture method but also includes a practical knowledge of certain subjects This way of education helps a student to grasp the basic concepts and principles Thus trying to break the stereotype that subjects like Mathematics and Science means studying lengthy formulas complex structures and handling complicated instruments we are trying to make education easy fun and enjoyable **Entrepreneurship With Practical Class XI - SBPD Publications** Dr. S. K. Singh, , Sanjay Gupta, 2021-10-28 UNIT I Entrepreneurship and Human Activities 1 Entrepreneur Meaning Concept and Forms 2 Entrepreneurship Meaning Concept and Role of Socio economic Environment 3 Entrepreneurial Development Programmes 4 Critical Evaluation of Entrepreneurial Development Programme 5 Role of Entrepreneur In Economic Development as an Innovator and in Generation of Employment Opportunities 6 Role of Entrepreneur In Balanced Economic Development 7 Micro Small and Medium Enterprises in India 8 Entrepreneurial Pursuits and Human Activities Economic and Noneconomic 9 Innovation and Entrepreneur UNIT II Acquiring Entrepreneurial Values and Motivation 10 Business Ethics and Acquiring Entrepreneurial Values Attitudes and Motivation 11 Developing Entrepreneurial Motivation Concept and Process 12 Business Risk taking Management 13 Leadership Meaning and Importance 14 Communication Importance Barriers and Principles 15 Planning Meaning and Importance 16 Barriers to Entrepreneurship 17 Help and Support to Entrepreneur UNIT III Introduction to Market Dynamics 18 Understanding A Market 19 Competitive Analysis of the Market 20 Patents Trademarks and Copyrights PRACTICAL 21 Project Work 22 Project Planning 23 Project Report General Model 24 Case Study 25 Project Analysis **Entrepreneurship with Practical Class - 11** Dr. S. K. Singh , Sanjay Gupta, 2023-12-03 UNIT I Entrepreneurship and Human Activities 1 Entrepreneur Meaning Concept and Forms 2 Entrepreneurship Meaning Concept and Role of Socio economic Environment 3 Entrepreneurial Development Programmes 4 Critical Evaluation of Entrepreneurial Development Programme 5 Role of Entrepreneur In Economic Development as an Innovator and in Generation of Employment Opportunities 6 Role of Entrepreneur In Balanced Economic Development 7 Micro Small and Medium Enterprises in India 8 Entrepreneurial Pursuits and Human Activities Economic and Non economic 9 Innovation and Entrepreneur UNIT II Acquiring Entrepreneurial Values and Motivation 10 Business Ethics and Acquiring Entrepreneurial Values Attitudes and Motivation 11 Developing Entrepreneurial Motivation Concept and Process 12 Business Risk taking Management 13 Leadership Meaning and Importance 14 Communication Importance Barriers and Principles 15 Planning Meaning and Importance 16 Barriers to Entrepreneurship 17 Help and Support to Entrepreneur UNIT III Introduction to Market Dynamics 18 Understanding A Market 19 Competitive Analysis of the Market 20 Patents Trademarks and Copyrights PRACTICAL 21 Project Work 22

Project Planning 23 Project Report General Model 24 Case Study 25 Project Analysis Viva Voce Questions Value Based Questions VBQ Latest Model Paper Examination Paper with OMR Sheet **Practical/Laboratory Manual Chemistry Class XI based on NCERT guidelines by Dr. S. C. Rastogi & Er. Meera Goyal** Dr. S. C. Rastogi , Er. Meera Goyal, 2020-06-23 An Excellent Book in Accordance with the latest syllabus for Class 11 Prescribed by CBSE NCERT and Adopted by Various State Education Boards

A Basic Laboratory Techniques

- 1 To cut a glass tube or glass rod
- 2 To bend the glass rod at an angle
- 3 To draw a glass jet from a glass tube
- 4 To bore a cork and fit a glass tube into it

B Characterisation and Purification of Chemical Substances

- 1 To determine the melting point of the given unknown organic compound and its identification simple laboratory technique
- 2 To determine the boiling point of a given liquid when available in small quantity simple laboratory method
- 3 To prepare crystals of pure potash alum $K_2SO_4 \cdot Al_2(SO_4)_3 \cdot 24H_2O$ from the given impure sample
- 4 To prepare the pure crystals of copper sulphate from the given crude sample
- 5 To prepare pure crystals of benzoic acid from a given impure sample

C Measurement of pH Values

- 1 To determine the pH value of vegetable juices fruit juices tap water and washing soda by using universal pH paper
- 2 To determine and compare the pH values of solutions of strong acid HCl and weak acid CH_3COOH of same concentration
- 3 To study the pH change in the titration of strong base Vs strong acid by using universal indicator paper
- 4 To study the pH change by common ion CH_3COO^- ion in case of weak acid CH_3COOH
- 5 To determine the change in pH value of weak base NH_4OH in presence of a common ion NH_4^+

D Chemical Equilibrium

- 1 To study the shift in equilibrium between ferric ions and thiocyanate ions by changing the concentrations of either of the ions
- 2 To study the shift in equilibrium between Co^{2+} and Cl^- ions by changing the concentrations of either of the ions

E Quantitative Analysis

- 1 To prepare M 10 oxalic acid solution by direct weighing method
- 2 To prepare M 10 solution of sodium carbonate by direct weighing method
- 3 To determine the strength of given solution of sodium hydroxide by titrating it against N 10 or M 20 solution of oxalic acid
- 4 To determine the strength of a given solution of hydrochloric acid by titrating it against a standard N 10 or M 20 sodium carbonate solution

F Qualitative Analysis

- 1 Analysis of Anions
- 2 Analysis of Cations

G Detection of Elements in Organic Compounds

- 1 To detect the presence of nitrogen sulphur and halogens in a given organic compound by Lassaigne's test
- 2 To detect the presence of nitrogen sulphur and halogens in the given organic compound sample number by Lassaigne's test

INVESTIGATORY PROJECTS

A Checking of Bacterial Contamination in Water

- 1 To check the bacterial contamination in drinking water by testing sulphide ions

B Methods of Water Purification

- 1 To purify water from suspended impurities by using sedimentation
- 2 To purify water by boiling
- 3 To purify water by distillation method
- 4 To purify water by reverse osmosis technique
- 5 To purify water by GAC method
- 6 To purify water by bleach treatment
- 7 To purify water by oxidising agent
- 8 To purify water by ozone treatment method

C Water Analysis

- 1 To test the hardness of different water samples

D Foaming Capacity of Various Soaps

- 1 To compare the foaming capacity of different washing soaps
- 2 To study the effect of addition of sodium carbonate on foaming capacity of washing soap

E Tea Analysis

- 1 To study the acidity of

different samples of tea leaves tea by using pH paper F Analysis of Fruits and Vegetable Juices 1 To analyse the fruit and vegetable juices for the constituent present in them G Rate of Evaporation 1 To study the rate of evaporation of different liquids H Effect of Acids and Bases on Tensile Strength of Fibres 1 To compare the tensile strength of natural fibres and synthetic fibres 2 To study the effect of acids and bases on tensile strength of different fibres Log Antilog Table

Comprehensive Laboratory Manual In Biology XI Dr. J. P. Sharma, 2011-12 *Practical/Laboratory Manual Chemistry Class - XI* Er. Meera Goyal, 2021-05-29

1 Basic Laboratory Techniques 1 To cut a glass tube or glass rod 2 To bend the glass rod at an angle 3 To draw a glass jet from a glass tube 4 To bore a cork and fit a glass tube into it Viva Voce 2

Characterisation and Purification of Chemical Substances 1 To determine the melting point of the given unknown organic compound and its identification simple laboratory technique Viva Voce 2 To determine the boiling point of a given liquid when available in small quantity simple laboratory method Viva Voce 3 To prepare crystals of pure potash alum $K_2SO_4 \cdot Al_2(SO_4)_3 \cdot 24H_2O$ from the given impure sample 4 To prepare the pure crystals of copper sulphate from the given crude sample 5 To prepare pure crystals of benzoic acid from a given impure sample Viva Voce 3

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Chemical Equilibrium 1 To study the shift in equilibrium between ferric ions and thiocyanate ions by changing the concentrations of either of the ions 2 To study the shift in equilibrium between $Co(H_2O)_6^{2+}$ and Cl^- ions by changing the concentrations of either of the ions Viva Voce 5

Quantitative Analysis 1 To prepare M 10 oxalic acid solution by direct weighing method 2 To prepare M 10 solution of sodium carbonate by direct weighing method 3 To determine the strength of given solution of sodium hydroxide by titrating it against N 10 or M 20 solution of oxalic acid 4 To determine the strength of a given solution of hydrochloric acid by titrating it against a standard N 10 or M 20 sodium carbonate solution Viva Voce 6

Qualitative Analysis Analysis of Anions Analysis of Cations Viva Voce 7

Detection of Elements in Organic Compounds 1 To detect the presence of nitrogen sulphur and halogens in a given organic compound by Lassaigne's test 2 To detect the presence of nitrogen sulphur and halogens in the given organic compound sample number by Lassaigne's test Viva Voce

INVESTIGATORY PROJECTS 1 Checking of Bacterial Contamination in Water 1 To check the bacterial contamination in drinking water by testing sulphide ions Viva Voce 2

Methods of Water Purification 1 To purify water from suspended impurities by using sedimentation 2 To purify water by boiling 3 To purify water by distillation method 4 To purify water by reverse osmosis technique 5 To purify water by GAC method 6 To purify water by bleach treatment 7 To purify water by oxidising agent 8 To purify water by ozone treatment method Viva Voce 3

Water Analysis 1 To test the hardness of different

water samples Viva Voce 4 Foaming Capacity of Various Soaps 1 To compare the foaming capacity of different washing soaps 2 To study the effect of addition of sodium carbonate on foaming capacity of washing soap Viva Voce 5 Tea Analysis 1 To study the acidity of different samples of tea leaves tea by using pH paper Viva Voce 6 Analysis of Fruits and Vegetable Juices 1 To analysis the fruit and vegetable juices for the constituent present in them Viva Voce 7 Rate of Evaporation 1 To study the rate of evaporation of different liquids IViva Voce 8 Effect of Acids and Bases on Tensile Strength of Fibres 1 To compare the tensile strength of natural fibres and synthetic fibres 2 To study the effect of acids and bases on tensile strength of different fibres Viva Voce *Report - Educational Research and Innovations Committee, National Council of Educational Research and Training National Council of Educational Research and Training (India),1979* **Practical/Laboratory**

Manual Science Class X based on NCERT guidelines by Dr. J. P. Goel, Dr. S. C. Rastogi, Dr. Sunita Bhagia & Er.

Meera Goyal Dr. J. P. Goel,Dr. S. C. Rastogi,Dr. Sunita Bhagia ,Er. Meera Goyal,2020-06-26 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_2SO_4 3 aq Based on the above result to arrange Zn Fe Cu and Al metals in the decreasing order or 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 **Practical/Laboratory Manual Chemistry Class XII based on NCERT**

guidelines by Dr. S. C. Rastogi, Er. Meera Goyal Dr. S. C. Rastogi ,Er. Meera Goyal,2020-06-22 A Surface Chemistry 1 To prepare colloidal solution sol of starch 2 To prepare a colloidal solution of egg albumin 3 To prepare colloidal solution of gum

4 To prepare colloidal solution of aluminium hydroxide Al(OH)_3 5 To prepare colloidal solution of ferric hydroxide Fe(OH)_3 6 To prepare colloidal solution of arsenious sulphide As_2S_3 7 To purify a freshly prepared sol by dialysis 8 To compare the effectiveness of different common oils Castor oil cotton seed oil coconut oil kerosene oil mustard oil in forming emulsions

Viva Voce B Chemical Kinetics 1 To study the effect of concentration on the rate of reaction between sodium thiosulphate and hydrochloric acid 2 To study the effect of temperature on the rate of reaction between sodium thiosulphate and hydrochloric acid 3 To study the rate of reaction of iodide ions with hydrogen peroxide at different concentrations of iodide ions 4 To study the rate of reaction between potassium iodate KIO_3 and sodium sulphite Na_2SO_3 using starch solution as indicator

Viva Voce C Thermochemistry 1 Determine the enthalpy of dissolution of copper sulphate $\text{CuSO}_4 \cdot 5\text{H}_2\text{O}$ in water at Room temperature 2 To determine the enthalpy of neutralization of the reaction between HCl and NaOH 3 To determine enthalpy change during the interaction between acetone and chloroform

Viva Voce D Electrochemistry 1 To study the variation of cell potential in $\text{Zn}|\text{Zn}^{2+}||\text{Cu}^{2+}|\text{Cu}$ with change in concentration of electrolytes CuSO_4 or ZnSO_4 at room temperature

Viva Voce E Chromatography 1 To separate the coloured components pigment present in the given extract of leaves and flowers by ascending paper chromatography and find their R_f values 2 To separate the coloured components present in the mixture of red and blue inks by ascending paper chromatography and find their R_f values 3 To separate Co^{2+} and Ni^{2+} ions present in the given mixture by using ascending paper chromatography and determine their R_f values

Viva Voce F Preparation of Inorganic Compounds 1 Preparation of double salt of ferrous ammonium sulphate Mohr's salt from ferrous sulphate and ammonium sulphate 2 To prepare a pure sample of potash alum fitkari 3 Preparation of crystals of potassium ferric oxalate or potassium trioxalato ferrate III

Viva Voce G Preparation of Organic Compounds 1 Preparation of iodoform from ethyl alcohol or acetone 2 Preparation of acetanilide in laboratory 3 Preparation of β -Naphthol aniline dye 4 To prepare a pure sample of dibenzalacetone 5 To prepare a pure sample of p-nitro acetanilide

Viva Voce H Tests for the Functional Groups Present in Organic Compounds

Viva Voce I Study of Carbohydrates Fats and Proteins 1 To study simple reactions of carbohydrate 2 To study simple reactions of fats 3 To study simple reactions of proteins 4 To investigate presence of carbohydrates fats and proteins in food stuffs

Viva Voce J Volumetric Analysis 1 To prepare 250 ml of $M/10$ solution of oxalic acid 2 To prepare 250 ml of $M/10$ solution of ferrous ammonium sulphate 3 Prepare $M/20$ solution of oxalic acid with its help find out the molarity and strength of the given solution of potassium permanganate 4 Prepare $M/20$ solution of Mohr's salt using this solution determine the molarity and strength of potassium permanganate solution

Viva Voce K Qualitative Analysis

Viva Voce INVESTIGATORY PROJECTS 1 To study the presence of oxalate ions in guava fruit at different stages of ripening 2 To study the quantity of casein present in different samples of milk 3 Preparation of soyabean milk and its comparison with natural milk with respect to curd formation effect of temperature etc 4 To study the effect of potassium bisulphite as food preservative at various concentrations 5 To study the digestion of starch by salivary amylase and the effect of pH and

temperature on it 6 To study and compare the rate of fermentation of the following materials wheat flour gram flour potato juice and carrot juice 7 To extract essential oils present in saunf aniseed ajwain corum illaichi cardomom 8 To detect the presence of adulteration in fat oil and butter 9 To investigate the presence of NO₂ in brinjal **Complete Science**

Laboratory Manual CBSE For Class 10 Education Experts,2019-10 **Physics Lab Manual Class XI | According to**

the latest CBSE syllabus and other State Boards following the CBSE curriculum Mr. Rohit Manglik,Mr. Pradeep Dwivedi,2022-08-04 With the NEP and expansion of research and knowledge has changed the face of education to a great extent In the Modern times education is not just constricted top the lecture method but also includes a practical knowledge of certain subjects This way of education helps a student to grasp the basic concepts and principles Thus trying to break the stereotype that subjects like Physics Chemistry and Biology means studying lengthy formulas complex structures and handling complicated instruments we are trying to make education easy fun and enjoyable **Lab Manual Science Class**

09 Neena Sinha, R.Rangarajan, Rajesh Kumar, 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 **Lab Manual-Physics-TB-11_E-R1** Dr R K Gupta, Lab Manual Physics TB 11_E R1

CBSE Laboratory Manual Mathematics Class 9 Divya Malik,2022-12-13 Once William Paul Thurston said Mathematics is not about numbers equations computations or algorithms it is about Understanding It is a constant effort of NCERT that it puts on its textbooks to promote clearer understanding of concepts in every student As important as theoretical study is Practical study is also essential to prove theories into realities The freshly updated edition of LABORATORY MANUAL Mathematics for class IX has been designed as a complete package to understand all the relevant mathematical experiments in a simple lucid and interactive manner Strictly based on CBSE guidelines each activity includes theory to give deep insights into each concept formula term definition etc Viva Voce questions Notes Suggested Activities Applications etc are accumulated to make concepts clearer in accordance with the curriculum Along with the Activities all the projects listed in NCERT Lab Manual have also been properly covered This book serves as a step by step guide for conducting experiments in such a way that students will not need to refer to any other book for explanations of the concepts An all inclusive guidance book for Maths laboratory activities Coverage of each activity in a simple and lucid manner Detailed and Step by Step procedure for each activity Accurate Figures Illustrations and Diagrams in each activity Detailed Demonstration and Calculations with each activity Notes Applications etc with each activity TABLE OF CONTENT Activity 1 34 List of Projects To Develop Heron s formula for area of a triangle story of Chronology of Indian Mathematicians with their contributions Development of formula for the area of a cyclic quadrilateral With rectangle of given perimeter finding the one with a maximum area and with rectangle of given area finding the ones with least perimeter Knowledge and classification of solid

figures with respect to surface areas and volumes Generation of Pythagorean triplets Magic squares with cuboid of given surface area finding the one with maximum volume and with cuboid of given volumes finding one with least surface area Mathematical designs and patterns Application of algebra in day to day life

Core Laboratory Manual of Physics for Class XI Anil Sharma, Prashant Sharma, Goyal Brothers Prakashan, 2020-04-16 Goyal Brothers Prakashan

Practical/Laboratory Manual Science Class IX based on NCERT guidelines by Dr. J. P. Goel, Dr. S. C. Rastogi, Dr. Sunita Bhagia & Er. Meera Goyal Dr. J. P. Goel, Dr. S. C. Rastogi, Dr. Sunita Bhagia, Er. Meera Goyal, 2020-06-26

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

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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

Lab Manual Science Class 10 Neena Sinha, R. Rangarajan, Rajesh Kumar, 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

Practical/Laboratory Manual Biology Class XII based on NCERT guidelines by Dr. Sunita Bhagia & Megha Bansal Dr. Sunita Bhagia, Megha Bansal, 2020-06-22

A List of Experiments 1 Study pollen germination on a slide 2 Collect and study soil from at least two different sites and study them for texture moisture content pH and water holding capacity Correlate with

the kinds of plants found in them 3 Collect water from two different water bodies around you and study them for pH clarity and presence of any living organism 4 Study the presence of suspended particulate matter in air at two widely different sites 5 Study the plant population density by quadrat method 6 Study the plant population frequency by quadrat method 7 Prepare a temporary mount of onion root tip to study mitosis 8 Study the effect of different temperatures and three different pH on the activity of salivary amylase on starch 9 Isolate DNA from available plant material such as spinach green pea seeds papaya etc

B Study observation of the following

- 1 Flowers adapted to pollination by different agencies wind insects birds
- 2 Pollen germination on stigma through a permanent slide
- 3 Identification of stages of gamete development i e T S of testis and T S of ovary through permanent slides from grasshopper mice
- 4 Meiosis in onion bud cell or grasshopper testis through permanent slides
- 5 T S of blastula through permanent slides Mammalian
- 6 Mendelian inheritance using seeds of different colour sizes of any plant
- 7 Prepare pedigree charts of any one of the genetic traits such as rolling of tongue blood groups ear lobes widow s peak and colour blindness
- 8 Controlled pollination emasculation tagging and bagging
- 9 Common disease causing organisms like Ascaris Entamoeba Plasmodium any fungus causing ringworm through permanent slides or specimens Comment on symptoms of diseases that they cause
- 10 Two plants and two animals model virtual images found in xeric conditions Comment upon their morphological adaptations
- 11 Two plants and two animals models virtual images found in aquatic conditions Comment

Content EXPERIMENTS

- 1 To study pollen germination on slide
- 2 To study the texture moisture content pH and waterHolding 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 onthe 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 disease causing organisms
- 10 Xerophytic adaptation
- 11 Aquatic adaptation

Reviewing **Ncert Cbse Practical Lab Manual Class 11**: Unlocking the Spellbinding Force of Linguistics

In a fast-paced world fueled by information and interconnectivity, the spellbinding force of linguistics has acquired newfound prominence. Its capacity to evoke emotions, stimulate contemplation, and stimulate metamorphosis is truly astonishing. Within the pages of "**Ncert Cbse Practical Lab Manual Class 11**," an enthralling opus penned by a very acclaimed wordsmith, readers embark on an immersive expedition to unravel the intricate significance of language and its indelible imprint on our lives. Throughout this assessment, we shall delve in to the book is central motifs, appraise its distinctive narrative style, and gauge its overarching influence on the minds of its readers.

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