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CLASS



Ncert Biology Practical Manual Class Xii

**Dr. Priyanka Gupta, Mr. Kaushalesh
Dwivedi**



Ncert Biology Practical Manual Class Xii:

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 Spotting 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 **NCERT Biology Practical/Lab Manual/Project Class 12** Dr. Sunita Bhagiya, ,Megha Bansal,2024-09-29 EXPERIMENTS 1 To study pollen germination on slide 2 To study plant population density by quadrat method 3 To study plant population frequency by quadrat method 4 To study various stages of mitosis in root tip of onion by preparing slide in acetocarmine 5 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 Symbolic Association in root nodules 11 Homologous and analogous organs PROJECTS 1 To study the different means of pollination 2 To study infectious diseases of humans 3 To study birth rate and death rate In your village or town 4 To study genetic disorders 5 To study malaria causes and disorders 6 To study causes symptoms and diagnosis of cancer 7 To study causes symptoms and diagnosis of AIDS 8 To study the applications and importance of Biotechnology 9 At the time of COVID 19 what kind of problems did your acquaintance have to face when he got covid 10 To study DRUG ABUSE 11 Name the medicinal drugs which are banned all over the world 12 Describe the response of biotic factors to abiotic factors in the environment 13 Biodiversity and Conservation Practices in Indian Culture 14 What has been the effect on pollution control after covid 15 To study Management of sewage and waste materials 16 To study the role of micro organisms in human welfare 17 To study about harmful micro organisms VIVA VOCE FOR PRACTICE Practical/Laboratory Manual Physics Class XII based on NCERT guidelines by Dr. Sunita Bhagia & Megha Bansal Dr. J. P. Goel, Er. Meera Goyal, 2020-06-24 SECTION A EXPERIMENTS 1 To determine resistance per cm of a given wire by plotting a graph for potential difference versus current 2 To find resistance of a given wire using meter bridge and hence determine the specific resistance Resistivity of its material 3 To verify the laws of combination Series Parallel of resistance using ammeter bridge 4 To compare the e m f of two given primary cells using potentiometer 5 To determine the internal resistance of a given primary cell e g Leclanche cell using potentiometer 6 To determine the resistance of a galvanometer by half deflection method and to find its figure of merit 7 A To convert a given galvanometer of known resistance and figure of merit into an ammeter of desired range and to verify the same 7 B To convert a given galvanometer of known resistance and figure of merit into a voltmeter of desired range and to verify the same 8 To find the frequency of AC mains with a sonometer and horse shoe magnet SECTION B EXPERIMENTS 1 To find the value of v for different values of u in case of a concave mirror and to find the focal length 2 To find the focal length of a convex lens by plotting graph between u and v or $1/u$ and $1/v$ 3 To find the focal length of a convex mirror using a convex lens 4 To find the focal length of a concave lens using a convex lens 5 To determine the angle of minimum deviation for a given prism by plotting a graph between the angle of incidence and angle of deviation 6 To determine refractive index of a glass slab using a travelling microscope 7 To find the refractive index of a liquid by using a convex lens and a plane mirror 8 To draw I V characteristics curve of a p n junction in forward bias and reverse bias 9 To draw the characteristics curve of a zener diode and to determine its reverse break down voltage 10 To study the characteristics of a common emitter n p n or p n p transistor and to find out the values of current and voltage gains SECTION A ACTIVITIES 1 To measure the resistance and impedance of an inductor with or without iron core 2 To measure resistance voltage AC DC current AC and check continuity of given

circuit using multimeter 3 To assemble a household circuit comprising of three bulbs three on off switches a fuse and a power source 4 To assemble the components of a given electrical circuit 5 To study the variation in potential drop with length of a wire for a steady current 6 To draw the diagram of a given open circuit comprising atleast a battery resistor rheostat key ammeter and voltmeter Make the components that are not connected in proper order and correct the circuit and also the circuit diagram

SECTION B ACTIVITIES

- 1 To study effect of intensity of light by varying distance of the source on an LDR Light Depending Resistor
- 2 To identify a diode a LED a transistor an IC a resistor and a capacitor from mixed collection of such items
- 3 Use a multimeter to i identify the transistor ii distinguish between n p n and p n p type transistor iii see the unidirectional flow of current in case of a diode and a LED iv Check whether a given electronic components e g diode transistor or IC is in working order
- 4 To observe refraction and lateral deviation of a beam of light incident obliquely on a glass slab
- 5 To observe polarisation of light using two polaroids
- 6 To observe diffraction of light due to a thin slit
- 7 To study the nature and size of the image formed by i convex lens ii concave mirror on a screen by using candle and a screen for different distance of the candle from the lens mirror
- 8 To obtain a lens combination with the specified focal length by using two lenses from the given set of lenses

SUGGESTED INVESTIGATORY PROJECT

- 1 To Study Various factors on which the Internal Resistance EMF of a cell depends
- 2 To study the variations in current following in a circuit containing L D R because of variation a In the power of incandescent lamp used to illuminate the L D R Keeping all the lamps in fixed position b In the Distance of a incandescent lamp of fixed power used to illuminate the L D R
- 3 To find the refractive indices of a Water b Oil Transparent using a plane mirror an equiconvex lens made from a glass of known refractive index and an adjustable object needle
- 4 To design an appropriate logic gate combination for a given truth table
- 5 To investigate the relation between the ratio of i Output and Input voltage ii Number of turns in secondary coils and primary coils of a self designed transformer
- 6 To Investigate the dependence of angle of deviation on the angle of incidence using a hollow prism filled one by one with different transparent fluids
- 7 To Estimate the charge induced on each one of the two identical styrofoam balls suspended in a vertical plane by making use of Coulomb's Law
- 8 To study the factors on which the self inductance of a coil depends by observing the effect of this coil when put in series with a resistor bulb in a circuit fed up by an a.c source of adjustable frequency
- 9 To study the earth's magnetic field using a tangent galvanometer

APPENDIX Some Important Tables of Physical Constants
 Logarithmic and other Tables

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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 Physics Chemistry and Biology means studying lengthy formulas complex structures and handling complicated instruments we are trying to

make education easy fun and enjoyable 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 Tradescantia 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 Globosa Snail 11 Asterias Starfish 12 Scoliodon Dogfish Shark 13 Labeo Rohita Rohu 14 Rana Tigrina Frog 15 Hemidactylus Lizard 16 Columba Livia Pigeon 17 Oryzomys 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 takes 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 Study Material Based on NCERT English Class- XII Rajamohan Srivastava, ,Amit Ganguli,2021-10-29 Section A Flamingo Prose and Poetry Flamingo A Prose 1 The Last Lesson Alphonse Daudet 2 Lost Spring Arundhati Jay 3 Deep Water William Douglas 4 The Rattrap Selma Lagerlof 5 Indigo Louis Fischer 6 Poets and Pancakes Ashokmitran 7 The Interview Christopher Silverster 8 Going Places A P Barton Flaming B Poetry 1 My Mother at sixty Six Kamala Das 2 An Elementary School Classroom in a Slum Stephen Spender 3 Keeping Quiet Pablo Neruda 4 A Thing of Beauty John Keats 5 A Roadside Stand Robert Frost 6 Aunt Jennifer s Tigers Adrienne Rich Section B Vistas Supplementary Reader 1 The Third Level Jack Finney 2 The Tiger King Kalki 3 Journey to the End of the

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 Goel,Dr. S. C. Rastogi,Dr. Sunita Bhagia ,Er. Meera Goyal,2020-06-26 Physics 1 To determine the focal length of concave
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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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