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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 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 **Indian**

National Bibliography ,2015-07 *Vārshika Riporṭa* India. Ministry of Human Resource Development,1988 N.I.E. Newsletter ,1969 *Practical/Laboratory Manual Science Class 10 based on NCERT Guidelines* Dr. J. P. Goel, ,Dr. S. C.

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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 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

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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 $\text{K}_2\text{SO}_4 \cdot \text{Al}_2\text{SO}_4 \cdot 24\text{H}_2\text{O}$ 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 $\text{Co H}_2\text{O}$ 6 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

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