Practical Syllabus for Class XII (Non-Medical & Medical) 2024-25

Physics

SECTION–A

1. To determine resistivity of two / three wires by plotting a graph for potential difference versus current.
2. To find resistance of a given wire / standard resistor using metre bridge.
3. To verify the laws of combination (series/Parallel) of resistances using a metre bridge.
4. To determine resistance of a galvanometer by half-deflection method and to find its figure of merit.
5. To convert the given galvanometer (of known resistance and figure of merit) into a voltmeter of desired range and to verify the same.

OR

To convert the given galvanometer (of known resistance and figure of merit) into an ammeter of desired range and to verify the same.

6. To find the frequency of AC mains with a sonometer.

Activities

1. To assemble a household circuit comprising three bulbs, three (on/off) switches, a fuse and a power source.
2. To assemble the components of a given electrical circuit.
3. To draw the diagram of a given open circuit comprising at least a battery, resistor/rheostat, key, ammeter and voltmeter. Mark the components that are not connected in proper order and correct the circuit and also the circuit diagram.

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 mirror, using a convex lens.
3. To find the focal length of a convex lens by plotting graphs between u and v or between 1/u and 1/v.
4. To find the focal length of a concave lens, using a convex lens.
5. To determine angle of minimum deviation for a given prism by plotting a graph between 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 using convex lens and plane mirror.
8. To find the refractive index of a liquid using a concave mirror and a plane mirror.
9. To draw the I-V characteristic curve for a p-n junction diode in forward and reverse bias.

Activities

1. To identify a diode, an LED, a resistor and a capacitor from a mixed collection of such items.
2. To observe refraction and lateral deviation of a beam of light incident obliquely on a glass slab.
3. To study the nature and size of the image formed by a (i) convex lens, or (ii) concave mirror, on a screen by using a candle and a screen (for different distances of the candle from the lens/mirror).

Chemistry

1. Surface chemistry (any one).
2. Chemical kinetics (All).
3. Thermochemistry (Enthalpy of neutralization of HCl and NaOH)
4. Electrochemistry.
5. Chromatography (All).
6. Preparation of Inorganic compounds (Ferrous Ammonium sulphate and Potash Alum).
7. Preparation of organic compounds (any one).
8. Test for functional group.
9. Test for carbohydrate, fat, protein.
10. Volumetric Analysis ($KMnO_4$ with oxalic acid and Mohr's salt)
11. Inorganic Salt Analysis.

Activities

1. Study of digestion of starch by salivary amylase and effect of pH and temperature on it.
2. Study of the presence of oxalate ions in guava fruit at different stages of ripening.
3. Study of quantity of casein present in different samples of milk.

Physical Education

1. .Fitness tests administration
2. Procedure for Asanas, Benefits and contradictions for any two Asanas for each lifestyle disease.
3. Procedure for administering senior citizen fitness test for 5 elderly family members.
4. Any one game of your choice out of the following list with labelled diagram of the field and equipment.

   (Rules, Terminologies and skills)

   - Athletics
   - Basket Ball
   - Cricket
   - Hockey
   - Football
   - Volley Ball
   - Hand Ball
   - Badminton
   - Kabaddi Kho-Kho

Biology

List of Experiments

Section-A

A1. Study of Pollen germination on a slide.

A2 Study the plant population density by quadrat method.

A3 Study the plant population frequency by quadrat method.

A4 Isolate DNA from available plant material such as spinach, green pea seeds, papaya etc.

A5. To prepare a temporary mount of onion root tip of study mitosis.

Section-B

B1. Study of flower adapted to pollination by different agencies (Wind, insect)

B2. Pollen germination on stigma though permanent slide on scanning electron micrograph.

B3. Study the identify stage of gamete development i.e. T.S. testis and T.S. ovary through permanent slides.

B4. To study meiosis in onion bud cell or grasshopper testis through permanent slides.

B5. Study of T.S. of blastula through permanent slides.

B6. Mendelian inheritance using seeds of different colour/sizes of any plant.

B7. To study prepared pedigree charts of any one of the genetic traits such as rolling of tongue, blood group, ear lobes, widow's peak and colour blindness.

B8. Exercise on controlled pollination emasculation, tagging and baggaing

B9. To identify common disease-causing organisms likes Ascaris, Entamoeba, Plasmodium, Ringworm through permanent slides or specimens. Comment on symptoms of diseases that they cause.

B10. Model specimen showing symbiotic association in root modules of leguminous plant cuscuta on host, lichens.

B11. Flash card models showing example of Homologous and analogous organs.