

**PHYSICS,
CHEMISTRY &
BIOLOGY
PRACTICAL LAB
COURSE 2024-25
For Class 12**



DREAMZTM
EDUCATION CENTRE
[Unit of DRMZEDU Services Pvt. Ltd.]

DETAILS OF COURSE

- Experiments will be done according to the given specific dates and Time
- Students have to select any one batch between MONDAY BATCH and FRIDAY BATCH.
- The data sheet of each of the experiment will be given to the students
- The questions of the Viva exam will be given to the students
- All the practical classes will be organized under the guidance of Mr. Subhadip Ray.

DATE & BATCH TIMING

Starting from 10th JUNE 2024

MONDAY BATCH

10AM-11.30AM: PHYSICS, 11.30AM-1PM: CHEMISTRY, 1.30PM-3PM: BIOLOGY

OR

FRIDAY 1st BATCH

10AM-11.30AM: BIOLOGY, 11.30AM-1PM: PHYSICS, 1.30PM-3PM: CHEMISTRY

OR

FRIDAY 2nd BATCH [SUITABLE FOR THE STUDENTS WITH BIOLOGY]

10AM-11.30AM: CHEMISTRY, 11.30AM-1PM: BIOLOGY, 1.30PM-3PM: PHYSICS

PHYSICS SYLLABUS FOR CLASS 12

Exp 1.To establish current-voltage relationship (Ohm's law) for a metallic conductor and find its resistance of the wire per unit length.

Exp 2.To find the specific resistance of a given wire by using meter bridge

Exp 3.Verify the combination of resistance in series by using meter bridge

Exp 4.Verify the combination of resistance in parallel by using meter bridge

Exp 5.To find the resistance of a galvanometer and its figure of merit by the half deflection method

Exp 6.To convert a galvanometer of known resistance and known figure of merit in to a voltmeter

Exp 7.To convert a galvanometer of known resistance and known figure of merit in to a Ammeter

Exp 8.To find the values of 'v' for different values of 'u' for a concave mirror and hence to find its focal length

Exp 9.To find the values of 'v' for different values of 'u' for a Convex Lens and hence to find its focal length by plotting the graph between 'u' and 'v'

Exp 10.To find the refractive index of a glass slab by using travelling microscope

Exp 11.To find the refractive index of a liquid by using convex lens and plane mirror

Exp 12.To determine angle of minimum deviation for a given prism by plotting a graph between angle of incidence and the angle of deviation.

Exp 13.To draw the V-I characteristic graph of the p-n junction diode in forward and reverse bias and hence to find the resistance in forward and reverse bias

CHEMISTRY SYLLABUS FOR CLASS 12

Determination of concentration/ molarity of KMnO_4 solution by titrating it against a standard solution of: i) Oxalic acid

ii) Ferrous Ammonium Sulphate

Exp 1: To Determine the Concentration and Strength of KMnO_4 Solution Using (M/20) Standard Mohr's Salt Solution.

Qualitative analysis

Determination of one cation and one anion in a given salt.

Cation - Pb^{2+} , Cu^{2+} , Al^{3+} , Fe^{3+} , Mn^{2+} , Zn^{2+} , Cu^{2+} , Co^{2+} , Ni^{2+} , Ca^{2+} , Sr^{2+} , Ba^{2+} , Mg^{2+} , $[\text{NH}_4]^+$

Anions - $[\text{CO}_3]^{2-}$, S^{2-} , $[\text{SO}_3]^{2-}$, $[\text{SO}_4]^{2-}$, $[\text{NO}_2]^-$, Cl^- , Br^- , I^- , $[\text{PO}_4]^{3-}$, $[\text{C}_2\text{O}_4]^{2-}$, CH_3COO^-

Exp 2: To confirm the basic (cation) radicals in a given sample

Exp 3: To confirm the acidic (anion) radicals in a given sample.

Exp 4: To separate the basic (cation) and acidic (anion) radicals [Group Separation] for a given sample

Exp 5: To perform the salt analysis of

Exp 6: To perform the salt analysis of

Exp 7: To perform the salt analysis of

Exp 8: To perform the salt analysis of

Exp 9: To perform the salt analysis of $(\text{CH}_3\text{COO})_2\text{Ca}$

Exp 10: To perform the salt analysis of

Exp 11: To perform the salt analysis of $\text{Sr}(\text{NO}_3)_2$

Tests for the functional groups present in organic compounds:

Unsaturation, alcoholic, phenolic, aldehydic, ketonic, carboxylic and amino (Primary) groups.

Exp 12a: Identification of organic compound present in given organic compound

Exp 12b: Identification of unsaturation in a given sample of organic compound.

Exp 12c: Identification of alcoholic group in a given sample of organic compound.

Exp 12d: Identification of ketone and aldehyde groups in an given sample of organic compound.

Exp 12e: Identification of phenol in an given sample of organic compound.

Exp 12f: Identification of amine group in an given sample of organic compound.

Exp 12g: Identification of carboxylic acid group in an given sample of organic compound.

Exp 13: Characteristic tests of carbohydrates and proteins

• Carbohydrates – glucose

• Proteins – powdered milk

Identification should be of 'Carbohydrate' and 'Protein' not of individual substances.

BIOLOGY SYLLABUS FOR CLASS 12

- Exp 1.To study the pollen germination on a slide
- Exp 2.To study the moisture content of different soils
- Exp 2.To study pH of different types of soil
- Exp 4.To study the water holding capacity of garden soil and roadside soil
- Exp 5.Collect water from two different water bodies around you and study them for pH
- Exp 6.To study different water samples for the presence of living organisms
- Exp 7.To study population density and percentage frequency of different plant species of a given area
- Exp 8.To prepare temporary acetocarmine stained mount of onion root tip to study various stages of mitosis
- Exp 9.To study the action of salivary amylase on starch
- Exp 10.To study the effect of different temperatures on the activity of salivary amylase on starch
- Exp 11.To study the effect of different pH on the activity of salivary amylase on starch
- Exp 12.To isolate DNA from available plant material such as spinach leaves, green pea seeds, papaya etc.
- Exp 13.To study the flowers adapted to pollination by different agencies • (wind, insect and birds)
- Exp 14.To study the pollen germination and growth of pollen tube in a pollinated pistil (in Portulaca/grass or any other suitable flower)
- Exp 15.To study and identify the stages of gamete development in mouse (mammal) i.e., T.S. of testis and L.S. of ovary through permanent slide
- Exp 16.To study meiosis in grasshopper testis through permanent slide
- Exp 17.To study T.S. of blastula through permanent slide
- Exp 18.To study Mendelian inheritance using seeds of different colour/size of any plant
- Exp 19.To study the prepared pedigree charts of genetic traits such as rolling of tongue, blood groups, widow's peak, colour blindness etc. .
- Exp 20.To comment on the exercises of hybridization (emasculation, tagging and bagging) through models/charts
- Exp 21.Study of Common Disease -Causing Organisms
- Exp 22.Study of two plants and two animals found in xerophytic conditions and comment upon their adaptations/morphological features
- Exp 23.Study of two plants and two animals found in aquatic conditions and comment upon their adaptations/morphological features

INSTRUCTIONS

1. Students have to select the batch at the time of Admission.
2. Seats are limited in the Batch.
3. No students will be admitted if the maximum number of seats is allotted in any batch
4. No students will be allowed to attend the practical without taking the Admission in Lab Course

Batch will be started from 10th JUNE 2024

💡 Dreamz Physics Practical Lab



💡 Dreamz Chemistry Practical Lab



💡 Dreamz Biology Practical Lab





DREAMZ EDUCATION

Barasat Study Centre:
1st Floor, Aarin Tower, Helabottola, Kolkata-125

Barasat Practical Lab Campus:
Arabindrapally, Barasat, Kolkata-125

Barrackpore Study Centre:
59, Feeder Road, Mondal para, Kolkata-120

PH: 9230527415, 8961945614, 9230419505
EMAIL: DREAMZEDUCATION07@GMAIL.COM
WWW.DREAMZKOLKATA.COM