



SARALA BIRLA PUBLIC SCHOOL

Mahilong, Ranchi

Assignment-2_2019-20)

Class: XII (Science)

Name : _____ UID : _____ : Roll no. : _____

English

Depict the entire story of any chapter from the prescribed syllabus with the help of paintings/ pictures. Do it in a chart paper.

Mathematics

1. Find the differential equation representing the family of curves $y = ae^{bx+5}$ where a and b are arbitrary constants.
2. Find the integrating factor of $x \frac{dy}{dx} - y = x^4 - 3x$.
3. Find the particular solution of the differential equation $e^x \tan y dx + (2-e^x) \sec^2 y e^y dy = 0$ given that $y = \frac{\pi}{4}$ when $x=0$.
4. Find the general solution of $y^2 dx + (x^2 - xy + y^2) dy = 0$.
5. Show that $(x-y)dy = (x+2y)dx$ is a homogenous differential equation. Also find the general solution.
6. Solve : $(\tan^{-1} x - y)dx = (1+x^2)dy$.
7. Find the equation of the curve through the point $(1,0)$ if the slope of the tangent to the curve at any point (x,y) is $\frac{y-1}{x^2+x}$.
8. Solve: $y + \frac{d(xy)}{dx} = x(\sin x + \log x)$.

Physics

1. To construct and investigate the input – output characteristics of a Full wave rectifier
2. To construct and investigate the input – output characteristics of a Half wave rectifier
3. Sequential glow of LED – Study of variable resistance

4. To construct a Step Down transformer and investigate the relation between the ratio of output and input voltage.
5. To construct an AC GENERATOR and analyse its functional characteristics.
6. To present a working model to demonstrate and analyse the phenomenon of ELECTROMAGNETIC INDUCTION.
7. To present a model to demonstrate and analyse the Charging and discharging of a capacitor.
8. To investigate the relation between the ratio of number of turns in secondary coil and primary coil of transformer.
9. To study the variation in current flowing in a circuit containing an LDR because of variation in the power of incandescent lamp used to illuminate the LDR. Keeping all the lamp at a fixed distance.

Chemistry

1. Study of the acidity of different samples of tea leaves .
2. Determination of the rate of evaporation of different liquids.
3. Study of common food adulterants in food stuffs like; sugar, butter, turmeric powder etc .
4. Preparation of rayon thread from filter paper using cuprammonium process.
5. Analysis of vegetable and fruit juices.
6. Study of casein quantity present in different samples of milk.

Note:- 1) Students have to complete any one project out of the given above projects during Durga puja vacation.
2) Presentation of the findings of a project is as important as its successful completion. The investigated projects are , generally, reported in the following format :

- a. Preliminary : i) Title of the project.(ii) Table of contents.(iii) List of graphs and figures (if any).
- b. Introduction : (i) History (ii) Scope for further work (iii) Objective of the project.
- c. Experimental: i) Details of each experiment performed .(ii) Tabulation of data.
- d. Discussion and conclusions : (i) Generalisation of the data. (ii) theory and conclusion.(iii) Suggestions for further work.
- e. Bibliography : List of books, consulted in execution of the project.

Biology

- 1) Make a project on Watson and Crick Model of D. N. A. Write down salient features and draw well labelled diagram.
- 2) Diagrammatically represent Recombinant DNA Technology.

Informatics Practices

Make a webpage using HTML on Seven Wonders.