



TULA'S INTERNATIONAL SCHOOL
HOLIDAY ASSIGNMENT – SUMMER VACATION 2021
FOR XII SCIENCE (NEW)

PHYSICS

Please perform one activity and complete one project from the following options:

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 a given circuit using multimeter.
3. To assemble a household circuit comprising 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 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.

Projects-

1. To study various factors on which the internal resistance/EMF of a cell depends.
2. To study the variations in current flowing in a circuit containing an LDR because of a variation in (a) the power of the incandescent lamp, used to 'illuminate' the LDR (keeping all the lamps at a fixed distance). (b) the distance of a incandescent lamp (of fixed power) used to 'illuminate' the LDR.
3. To find the refractive indices of (a) water (b) oil (transparent) using a plane mirror, an equi convex lens (made from a glass of known refractive index) and an adjustable object needle.

NOTE:

- (1) Though you might not be aware of some terms, concepts or models, but you are supposed to investigate about them and then perform the activity or do your project work.
- (2) If you are not able to manage to make a working models, then try to find out simulations for them or make a PPT on the given topic.

CHEMISTRY

Prepare an investigatory project on any of the given topics or any other as per CBSE site

1. Proteins (Importance of proteins in human diet, Denaturation)
2. Colloids (Formation of colloids and its applications)
3. Role of colligative properties in daily life & compare the temperature variation of your state. (Elevation in boiling point & Depression in freezing point)
4. Purification of water & Desalination of sea water (Reverse Osmosis)
- 5 Dyeing of fabrics and its techniques.
- 6 Effect of metal coupling on rusting of iron.
- 7 Study of quantity of casein present in different samples of milk.
- 8 Study of common food adulterants in various food materials.
- 9 Study of effect of potassium bisulphate as food preservative under various conditions.
- 10 Preparation of Soyabean milk and its comparison with natural milk.

Instructions to be followed:-

1. Project to be investigatory and research oriented and it should have proper conclusion.
 2. Projects should be made in the form of PPTs, Videos, and project report.
 3. It is advised to mail the soft copy and preserve the hard copy safely.
 4. The project should have the following headers:-
 - Name of the School
 - Class and Section
 - Session
 - Acknowledgement
 - Certificate
 - * Bibliography
 5. Do not copy or paste the materials from websites. Take help from websites and use your innovative approach and creativity.
 6. The content of the project should be well-researched.
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MATHEMATICS

Project on Applications of Conic Sections, Vectors, Three Dimensional Geometry and Calculus in Mathematics and Physics.

OR

Project on history of foreign Mathematicians such as Cantor, Pythagoras, Thales, Euclid, Apollonius, Descartes, Fermat, Leibnitz, Euler, Fibonacci, Gauss and Newton.

BIOLOGY

I Make an investigatory project on any one topic of the following :

- 1 Twins
- 2 Test tube baby
- 3 Cloning
- 4 Embryogenesis in Human beings
- 5 Cancer
- 6 Malaria
- 7 Effects of alcohol and drug abuse.

II Do the given worksheets I-IV

COMPUTER SCIENCE/INFORMATICS PRACTICES

Create a project based on Python programming language.

Hint: use a concept of list, dictionary, tuples and other required concepts of your need for your project.

Project examples: Library Management system, Grocery store management system, store management system etc.

Subject- English

- I. Read at least five short reports from any English newspaper. Cut and paste them on your notebook. On the basis of your reading of these reports, make notes on them in points only, using headings and sub-headings. Use recognisable abbreviations wherever necessary.
- II. **Advertisement:**
You are Rohit Gupta, Managing Director of Gupta and Sons, a CA Firm in Kamala Nagar, New Delhi. You want to appoint Audit Assistant and Computer Operators for your company. Draft an advertisement in not more than 50 words, giving all the necessary details of qualifications and experience required.
- III. **Formal Invitation:**
Ministry of Travel and Tourism is organising a week long National Festival of Classical Dances of India. On behalf of the Union Minister of Travel and Tourism, prepare a formal invitation card, inviting the general public to attend the festival. Invent necessary details about Chief Guest, date, timings and venue of the festival and R.S.V.P.
- IV. **Character Review:**
Watch any one of the following movies and prepare a review on any one of the characters that impresses you the most.
 - a. Good Will Hunting (1997)
 - b. The Social Network (2010)
- V. **PowerPoint presentation: (Slides)**
Read the book, 'Do Hard Things' by Alex and Brett Harris and summarise it in the form of PPT (slides). The slides must be in the following order:
 - General information about the book
 - Author's description
 - Characters description
 - Summary of the story
 - Moral/Message from the book

Note: You can include different pictures related to the text in the slides. Presentation in the form of paragraph will not be accepted. It must be in points. The slides must not be more than 10-15.