ISc PHYSICS PROJECT – INSTRUCTIONS AND GUIDELINES

Good Earth School

As per the ISC Physics scope of syllabus, you are allowed to do any Physics topic under the guidance and regular supervision of the Physics teacher. This project will carry 10 marks and will be assessed by the Visiting External Examiner on the day of the Physics ISC Practical Examination. In general, a project can be one of the three types...

1. Theoretical Project
2. Working Model
3. Investigatory Project (*Performing an experiment in the Lab*)

Apart from doing a project, a written report must be submitted for evaluation. In Good Earth School the whole process of a project consists of the following stages...

   1. Selecting a Project Topic
   2. Project Proposal
   3. Working Stage
   4. Project Report Write Up
   5. Corrections
   6. Final Submission of Project Report
   7. Presentation of Project to External Examiner

Note that all reports writing and correspondence until the end of stage 4, the correction stage, must be in electronic media only. No hand written material will be accepted. Students are expected to use Microsoft office, Open Office or Google Docs to write the reports.

<table>
<thead>
<tr>
<th>The following specifications has to be followed while doing Project Proposal and the Project Report. Written material should all be in the 3rd person format.</th>
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</thead>
<tbody>
<tr>
<td>1. <strong>FILE NAME:</strong> The file may be of MS Office, Google Doc or Open Office as per software availability. They must have a file name of the following format: &lt;Your first name&gt; &lt;STAGE&gt; &lt;Project Name&gt;..&lt;extenson&gt;</td>
</tr>
<tr>
<td>Example 1: Rohan PROPOSAL Earth AC Dynamo.doc</td>
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<tr>
<td>Example 2: Anju DRAFT 3 Cal of Earths B.docx</td>
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<td>Example 3: Anand FINAL DRAFT Pedagogy of Newton’s Laws.sxw</td>
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<tr>
<td>2. The Heading of the document must be the full project name, followed by your name and class.</td>
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<td>3. <strong>FORMATING:</strong></td>
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<tr>
<td>(a) The document must ONLY use Times New Roman font</td>
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<td>(b) Font size must be 12</td>
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<td>(c) Line spacing must be 1.5</td>
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<tr>
<td>(d) <strong>MAIN HEADING</strong> must be all caps and <strong>bold.</strong></td>
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<td>(e) <strong>Sub Headings</strong> must be in <strong>bold</strong> and not all caps</td>
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1. SELECTING A PROJECT TOPIC

This may be the most difficult aspect in this entire project work. However, if you follow some simple guidelines, you will be able to get through it easily.

(a) **Keep it simple:** The marks awarded is not for how sophisticated you project is but for how well you did what you did and how well you understand it!

(b) **Choosing a project** may be done by some google searches or by referring to ISC Practical Physics Textbook in the Library at the end of which there are a list of experimental topics.

(c) The best way however to approach a topic is to find out some problem you face or someone you know face in real life, around your home or in school or work place and suggest a practical solution to it. For example, a student once designed and made a working model of a mechanical water tank alarm because his tank at home would always overflow and waste water. It was simple, practical helpful and therefore beautiful!

(d) **Caution:** Please make sure you plan the entire work, written material etc in detailed and see an end to the project before you choose it. Otherwise, you will choose one, then figure out that some part of the thing you are making is not available in the market and then you will have to change the project mid-way. **This is the most repeated mistake by students every year.** So run the entire work clearly in your mind and make sure it can be finished. You make enven want to give your project a trial run before you write up the proposal. The only exception to this is Investigative projects. Since it is an investigation, you will not know the final result until you actually find it. **Therefore choosing the right project compared to the rest of the stages needs the most amount of time.**

2. PROJECT PROPOSAL

A proposal needs to be typed and emailed to the physics teacher. It should be a detailed report of the project that you plan to do and how you plan to do it. A project proposal needs to be a 1 or 2 page. You must give the details of what you plan to do, how to plan to do it, the materials you will require and how you will procure the materials, or if you want to use the school lab and equipment along with the list of equipment that you wish to use. All of this given in detail. You must also write about how long it will take for you to finish the project. You may also add as to how you came to choose the topic that you did and why you wish to do it.
3. WORKING STAGE

Once the project proposal is approved by the teacher, you can start your work as per the teacher’s instructions. If your project is experimental and you have to use the lab, please get the permission beforehand. Note that you must come fully prepared to the lab with all tables, procedure etc. properly studied and written down. The time in the lab is ONLY to do the actual experiment. Even results and calculations can be done at home. Proper preparation is mandatory failing to which you will not be allowed to use the lab.

Those who are not using the lab may work on their project at home. You must however, finish the work with the stipulated time. The teacher may be contacted at any time in case of doubts clarifications etc.

4. PROJECT REPORT WRITE UP

Note that this is the most important part as this is what is submitted for evaluation. Once the teacher has approved of the project that you have done, you are ready to make the formal report that will be submitted later to the external examiner for evaluation. This report must be finally hand written but must be typed and emailed first to the teacher, following all the specifications, as mentioned in the previous page of this document. The Project write up must consist of the following sections each on a fresh page.

(i) COVER PAGE: Will be printed for you by the teacher upon final submission.

(ii) ABSTRACT: Meaning a gist of what you have done and the context of your project in the grand scheme of things – The teacher will help you with this too. You may write the abstract after the entire work is completed.

(iii) CONTENT

(iv) INTRODUCTION: Introduction to all of the work that you have done

(v) HISTORY: The Historical context of the work that you have done including scientist who worked in the field, and how the field developed and any other relevant information.

(vi) THEORY: The Theory behind how the project works. Derivation of formulae, diagrams

(vii) THE WORK: This is the only part which will vary depending on the type of project you have chosen to do. However, Include diagrams, pictures and photographs wherever relevant.
(a) **Theoretical Project**: Write all that you are doing in detailed using headings and subheadings as you please.

(b) **Working Model**: Give a detailed list of parts and specification of every part. And how to construct the Model.

(c) **Investigatory Project**: Experimental aim, apparatus used, formulae, tables, procedure, calculations, results, everything must be given in detailed.

(viii) **COMMENTS OR SPECIAL OBSERVATIONS (if any)**: You may make a mention of any insight you had, difficulties you faced, scope for improvement or any other relevant information regarding the project in this section.

(ix) **CONCLUSION / RESULT**: The project must conclude with a conclusion of the work that you have done or with the result of the finding in case of an investigatory project.

5. **CORRECTIONS**

After all written report is typed and done, send it to the teacher by email for corrections. The teacher may suggest changes and corrections that must be incorporated. The first written report is your DRAFT 1. After the changes are incorporated, send this back the teacher, it is now DRAFT 2. This process continues back and forth between student and teacher till the teacher finally approves of a draft. This becomes your FINAL DRAFT.

6. **FINAL SUBMISSION OF PROJECT REPORT**

Once the FINAL DRAFT is approved and done, you may copy this down in to hand written form, neatly in A4 size paper without any change from the final draft. Use ONLY one side (the right side) of the paper for written work. The other side (left side) may be used for diagrams, pictures and photographs. Use a fresh page for each of the 8 headings mentioned in point 3 (project write-up). Use blue or black ink to write, you may use colour to write headings and subheadings. While good looking artistic work is always a joy to go through, please note that marks will be given only for the content and consistency you have maintained in doing the work. Having said that, shoddy, substandard work will NOT be accepted! The hand written report must be submitted to the teacher on or before the appointed date.

7. **PRESENTATION OF PROJECT TO EXTERNAL EXAMINER**

On the day of the ISC Physics Practical Exam, you are expected to bring your working models to present to the external examiner who will ask questions on the work that you have done. Be sure that you know everything about the project that you have done, and that final mark will depend on your knowledge and insight into the work that you have done.