

# Physics EE Checklist

**A: research question** The research question is clearly stated in the introduction and sharply focused, making effective treatment possible within the word limit.

1	Is the research question sharply focused	
2	Is your research question stated and in <b>bold</b> in the <i>Introduction</i> ?	

**B: introduction** (*about 1 page long, makes sense on its own*)

The context of the research question is clearly demonstrated. The introduction clearly explains the significance of the topic and why it is worthy of investigation.

3	Is the research question stated <b>in bold</b> in the introduction	
4	Does the introduction explain why the research question is interesting	
5	Does the introduction state the key physics concepts used in your essay	
6	Does the introduction relate the research question to existing knowledge	
7	Is the introduction brief, concise without irrelevant material.	

**C: investigation**

An imaginative range of appropriate sources has been consulted, or data has been gathered, and relevant material has been carefully selected. The investigation has been well planned.

8	Does your bibliography contain a variety of sources (textbooks, internet and scientific journals) that are cited in the essay?	
9	Have you explained to the reader the planning that went into your experiment	
10	Have you explained the relevant theory behind your essay	

## D: knowledge and understanding of the topic studied

The essay demonstrates a very good knowledge and understanding of the topic studied. Where appropriate, the essay clearly and precisely locates the investigation in an academic context.

11	Have you applied your existing knowledge in a new situation?	
12	Is the theory simple enough that you can understand it?	
13	Is the theory behind any experimental work clearly explained	

## E: reasoned argument

Ideas are presented clearly and in a logical and coherent manner. The essay succeeds in developing a reasoned and convincing argument in relation to the research question.

14	Do you develop a theory that explains your findings?	
15	Do you explain clearly what has been shown by graphs?	

## F: application of analytical and evaluative skills

The essay shows effective and sophisticated application of appropriate analytical and evaluative skills.

16	Have you explained graphical relationships without relying on excel?	
17	Have you focused on a few limitations of your essay and given an explanation of their effect? <i>This is better than a list of many</i>	
18	Have you discussed the impact of these limitations/error sources on your result?	
19	Have you included uncertainties on all measurements including mean values?	
20	Are you consistent with sig figs	
21	Are uncertainties propagated through your calculations	

## G: use of language appropriate to the subject

The language used communicates clearly and precisely. Terminology appropriate to the subject is used accurately, with skill and understanding.

22	Are physics terms used precisely?	
23	Are mathematical terms describing graphs used correctly?	
24	Are symbols used clearly and fully identified? <i>writing "t for time" would not be sufficient but writing "t for time during which the magnetic force is applied" would be precise and helpful.</i>	

## H: conclusion

An effective conclusion is clearly stated; it is relevant to the research question and consistent with the evidence presented in the essay. It should include unresolved questions where appropriate to the subject concerned.

25	Is your research question restated and in <b>bold</b> in the <i>Conclusion</i> ?	
26	Is your conclusion consistent with the data you have examined	
27	Does your conclusion address uncertainties, limitations or validity of sources	
28	Does your Conclusion address unresolved questions or new questions that have arisen in the investigation?	
29	Are results compared to literature values where available?	

## I: formal presentation

The formal elements are: title page, table of contents, page numbers, illustrative material, quotations, documentation (including references, citations and bibliography) and appendices (if used).

30	Is the essay within 4,000 words?	
31	Does your essay have a title page	
32	Is there a <i>contents page</i> ?	
33	Are all pages numbered?	
34	Are your references cited consistently and correctly?	
35	Does your bibliography only contain the works cited in the essay?	
36	Does the <i>Bibliography</i> specify author(s), title, date of publication and publisher for every reference, in alphabetical order?	
37	Does the <i>Appendix (if any)</i> contain only relevant (but non-essential) information? (the examiner does not have to read it.)	
38	Are diagram clearly labelled and numbered?	
39	Are all references to the appendices clearly cross-referenced and labelled?	
40	<i>Are equations numbered for easy reference</i>	

**J: abstract** state clearly the research question that was investigated, how the investigation was undertaken and the conclusion(s) of the essay.

<b>41</b>	Is <i>your Abstract</i> within 300 words?	
<b>42</b>	Does your abstract state clearly the research question that was investigated, how the investigation was undertaken and the conclusion(s) of the essay.	

## **K: holistic judgment**

The purpose of this criterion is to assess the qualities that distinguish an essay from the average, such as intellectual initiative, depth of understanding and insight.

<b>43</b>	Have you explained any original ideas that you had?	
<b>44</b>	Is a personal approach to practical work evident? Have you explained your thinking and taken credit for any original design or modification of experimental methods?	
<b>45</b>	Does your essay (especially the introduction) display curiosity?	