Independent Study Project: Final Report Scoresheet

I. SCIENTIFIC MERIT AND CREATIVE ABILITY (60 Points)

A. Problem *(Choose appropriate category)* ..... **5 →** ☐

1) ***Scientific:***
Is the problem or scientific question clearly stated? Is problem overly complex or too simple?
Engineering:
Does the project have a clear objective? Is the objective relevant to the potential user's needs?
Natural Science:
Is the problem clearly defined?
2) Was creativity/originality/independence shown in formulating the question asked?

B. Hypothesis *(Choose appropriate category)* ..... **5 →** ☐

1) ***Scientific:***
Is the hypothesis clearly stated?
Engineering:
Is the solution workable? Acceptable to the potential user? Economically feasible?
Natural Science:
a) Does the study address a significant problem? Can meaningful data be collected?
b) Will the study provide meaningful information for subsequent studies?
2) Is the hypothesis based on sufficient background information gained from research? Was a research paper on the topic prepared?
3) Does the hypothesis/solution/study show originality in thought and logic?

C. Procedure ..... **20 →** ☐

1) Was there a procedural plan for obtaining a solution?
2) Does the procedure provide a true test of the question/hypothesis?
3) Complexity/thoroughness of procedure
a) Are variables clearly recognized and defined? How many?
b) Are controls used and are variables adequately managed? If controls are necessary, did the student recognize their need and are they correctly used?
c) Were any problems encountered/solved in original procedure?
4) Does the procedure show creativity and originality in approaches to proving the hypothesis, finding resources of equipment and utilizing mentors?
5) Was innovative equipment constructed or utilized?

D. Results *(Choose appropriate category)* ..... **15 →** ☐

1) ***Scientific or Natural Science:***
a) Are tables, graphs, charts, and information properly presented and are measurement units, graphs axis, headers, and columns properly labeled?
b) Are complete/accurate notebook records available?
Engineering:
a) Could the solution be utilized successfully in design or construction of an end product?
b) Is the solution a significant improvement over previous alternatives?
2) Is there sufficient data collected to support the question and hypothesis?
a) Are replicate experiments performed and are statistics used as appropriate?
b) Did the experiment have to be repeated or improved before finalization?
3) Is creativity/originality shown in the compilation, and presentation of results/study?

E. Conclusions *(Choose appropriate category)* ..... **15 →** ☐

1) ***Scientific:***
a) Does the conclusion address the question/hypothesis?
b) Was the hypothesis correct or incorrect? (No deductions if it wasn't)
Engineering:
Has the solution been tested for performance under the conditions of use?
Natural Science:
a) Does the conclusion follow from the data collected?
b) Does the conclusion relate to the problem addressed in the study? Does it indicate the direction of future research?
2) Does the student recognize the data's limitations? Does the student have an idea of what further research is warranted?
4) Is creativity shown in scientific thought and in the evaluation of data presented by the student?

SCIENTIFIC MERIT AND CREATIVE ABILITY.....TOTAL (Maximum 60 points) → ☐