1. **Problem Definition and Research Hypothesis***
   The candidate, in consultation with the advisor, has identified a critical knowledge gap in a science or engineering field, and has proposed a clear hypothesis and/or problem definition that is testable to address this knowledge gap. The scope of this problem definition and/or corresponding hypothesis should be limited to that of a PhD dissertation, and it should focus on individual student contributions.

   Evaluation: 0 ☐ (not acceptable) 1 ☐ (satisfactory) 2 ☐ (excellent)

2. **Critical Review of Existing Literature (and Preliminary Results if available)**
   The candidate provides a clear, yet succinct, review of the literature to set the context for the proposed work. The literature review identifies key findings and limitations of publications relevant to the defined problem, and the candidate presents how he/she will advance the field. Preliminary results, if available, demonstrate the potential of the dissertation project to address the problem.

   Evaluation: 0 ☐ (not acceptable) 1 ☐ (satisfactory) 2 ☐ (excellent)

3. **Knowledge of the Research Methods***
   The candidate demonstrates the ability to utilize theoretical, computational, and/or experimental techniques that will be needed to conduct the proposed research. It is expected that the candidate demonstrates mastery of the techniques at the graduate level. Included in this mastery is the ability to demonstrate the fundamental operational principles of the theory, code, or experimental techniques that are to be utilized heavily by the student during the dissertation work.

   Evaluation: 0 ☐ (not acceptable) 1 ☐ (satisfactory) 2 ☐ (excellent)

4. **Potential of the Project to Generate Tangible Products within a PhD Timeline**
   The candidate presents a reasonable timeline for the proposed research including the next steps and a plan for generating products (i.e., publications, intellectual property, presentations, etc.). This research plan should include clear proposed short-term objectives and a contingency plan if the initial hypothesis was refuted by the data collected in the course of research.

   Evaluation: 0 ☐ (not acceptable) 1 ☐ (satisfactory) 2 ☐ (excellent)

5. **Impacts of the Proposed Research**
   The candidate provides the potential of the dissertation research (1) to advance knowledge and understanding within its own field or across different fields and (2) to benefit society.

   Evaluation: 0 ☐ (not acceptable) 1 ☐ (satisfactory) 2 ☐ (excellent)

6. **Communication Ability**
   The candidate presents the research project in a manner that is accessible to both an audience of chemical engineering faculty members with diverse backgrounds and to experts in the field of the

candidate. Moreover, the work should be presented in a professional, logical, and manner that is consistent with the format of relevant professional conferences, without typographical errors and with clearly presented figures.

Evaluation: 0 ☐ (not acceptable) 1 ☐ (satisfactory) 2 ☐ (excellent)

The candidate must attain 1 or 2 in the starred categories to pass the exam.

Overall Score: _____

Summary Recommendation
Pass ☐ Retake ☐ Fail ☐

Name of the Examining Committee Member: _____

Signature of the Examining Committee Member: _____

Committee Member Comments: