Problem 5   (68 marks)

Answer the following questions in one or two sentences:

    a. What is a weak pointer and when do we use it? (8)

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    b. How do we guarantee preconditions for operations in C++? (2)

5b)

    c. What are the canonical methods in C++? (12)

5c)

    d. Is Quick Sort strictly better than Merge Sort? Justify. (8)

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    e. What is the purpose of an empty tree? Justify. (8)

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f. Which modern C++ abstraction do we use when we need to return a value that does not exist? (2)

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g. What does amortized analysis show? (4)

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h. What is a load factor and what are the recommended factors, thresholds, and aims for expansion and contraction of dynamic memory? (12)

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i. What is required to test the equivalence of iterators? (4)

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