This exam covers Sections 2.3, 6.1, 7.1-7.3, 8.3, 8.4, 9.1, and 14.1-14.4. In particular, the exam will focus on the following topics (relevant homework problems in parentheses):

- Inverses in the integers modulo $n$ (2.3.1b)
- Logarithmic differentiation (7.2.15)
- L'Hospital's rule (9.1.1)
- Properties of the natural logarithm, derived from the definition (7.2.1, 7.2.2, 7.2.3)
- Sequences and series (14.2.2, 14.2.3)
- Error in Taylor polynomials (8.4.1, 8.4.2, 8.4.3)
- The mean value theorem, and the mean value theorem for integrals (8.3.2)

Recommended exercises for review:

- Find inverses for all the integers modulo 14 that have inverses.
- 7.2.13
- 9.1.7
- 7.2.9 (make sure you understand how these properties follow from the definition)
- 14.2.5, 14.2.8
- 8.4.4, 8.4.5

Also, make sure you can state the formal definition of the convergence of an infinite series (Definition 14.5 on page 204-205). And make sure you know how to prove the divergence of the harmonic series, using known features of the natural logarithm.