The final exam covers material from Chapters 2-5, 7, 8, and 9. You should know all the main definitions and theorems.

(1) You will be asked to give the precise definition of two of the following terms:
   • Countable Set
   • Uniform continuity
   • Uniform convergence
   • Equicontinuous family of functions at a point
   • Complete metric space
   • Compact metric space
   • Banach space

(2) You will be asked to state two of the following theorems
   • Bolzano-Weierstrass Theorem (Theorem 2.6.4)
   • Rearrangement Theorem (Theorem 3.4.8)
   • Heine-Borel Theorem (Theorem 4.4.6)
   • Sequential characterization of continuity (Theorem 5.3.1)
   • Arzela-Ascoli Theorem (Theorem 8.6.9)

(3) You will be asked to prove one of the following theorems:
   • Theorem 8.2.1
   • Theorem 8.6.5

(4) Some type of questions: You may be asked about
   • The uniform continuity of a given function on a set.
   • The uniform convergence of a given sequence of functions.
   • Interval of convergence of a series of functions
   • Compact subsets of $C(K)$ (see Example 8.6.10).

(5) Here are some suggested review problems:
Section 4.2: F,  Section 4.3: A,  Section 5.3: I and M,
Section 5.5: E and I,  Section 7.1: A and H,  Section 8.1: B,
Section 8.2: B,  Section 8.3: B,  Section 8.4: F,  Section 8.5: A,
Section 8.6: G, H.