Exam study sheet (SF2714)

Below are important theorems and concepts. You should also learn the proofs.

Euclidean algorithm (Theorem 8.2, Biggs),

How to solve Diophantine equations,

Fundamental theorem of arithmetics,

Existence of inverse modulo n,

Chinese remainder theorem,

Lagrange's theorem for groups,

Euclidean algorithm for polynomials (Theorem 22.5, Biggs),

Fundamental homomorphism theorem for rings,

Field extensions, quotient rings,

The binomial and multinomial theorems,

Bijective (combinatorial) proofs,

Formal power series,

Catalan numbers, number of derrangements,

Euler's theorem of existence of Eulerian walks,

Theorems 15.7.1 and 15.7.2 in Biggs,

Chromatic polynomials,

Error-correcting codes and Theorems 24.1 and 24.4 in Biggs