Communication & DSP PhD Qualifying Exam

Topics Covered:

Communications:
- Analysis and Transmission of Signals.
- Amplitude Modulations and Demodulations.
- Angle Modulation and Demodulation.
- Sampling and Analog-to Digital Conversion.
- Principles of Digital Data Transmission.
- Fundamentals of Probability Theory.

Digital Signal Processing:
- Basic logic concepts,
- Boolean algebra, truth tables and discrete logic diagrams.
- Karnaugh maps
- Programmable devices including ROM’s, PLA’s, and PAL’s.
- data selectors and multiplexors, flip-flops (D, T, JK, SR), and memory design of
sequential logic circuits
- State diagrams, state transition tables, counters, latches and registers
- Realization of sequential and arbitrary counters
- Monostable multivibrators

References:

Communications:

DSP:
- Or any basic digital design textbook

Tools Allowed During the Exam (please remember all exams are now closed book):

- 2 Sheets of 8.5 x 11 Paper Front and Back of Notes
- Scientific Calculator