1. ① Data transfer group.

    Example: 1RXY : Load data from the memory cell whose address is XY
                   to the register.R.

  ② Arithmetic / logic group.

    Example: 7RST: Cause the result of OR the contents of register S
              and register T to be place in register R.

  ③ Control group.

    Example: BOXY. Jump to the memory cell at address XY.

(All the examples are in Appendix C machine)

2. (1) 11 F0
      A104
      2215
      8012
      30F1

  (2) A0 2010
      A2 2101
      A4 2201
      A6 5332
      A8 5221
      AA B2AE
      AC B0A6
      AE C000

3. (1) 10101011

  (2) $(10)_2$