COMP262-01 LAB7-1, CH20 Digital Logic and Gates

You may choose to use free hand drawing in answering the questions and then 'scanning' and submitting as a .jpeg or .pdf

1) The eXclusive NOR gate, written XNOR, is equivalent to an XOR followed by an inverter.
   a) Draw the logic symbol for a two input XNOR gate.
   b) Construct its truth table.
   c) The XNOR is also called a 'comparator', WHY?

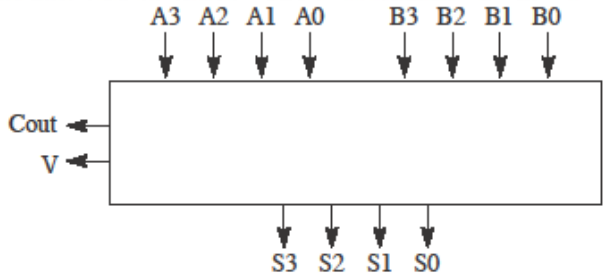
2) Identify each gate in Fig. 10.63(attached), as one of the following:
   1) an AND gate, 2) an OR gate, 3) a NAND gate, 4) a NOR gate
   Indicate it as: a=?, b=?.....

3) Write the Boolean expressions for the logic diagrams in Fig 10.62(attached)

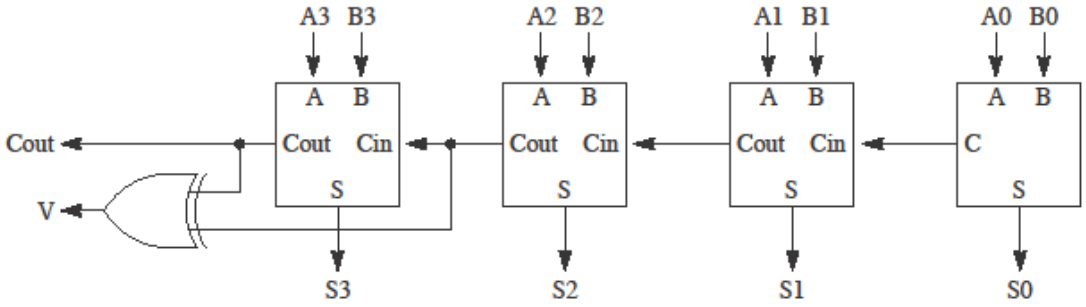
4) Modify Fig 10.52(b)(attached) to provide two additional outputs, one for the 'N' bit and one for the 'Z' bit.

5) Implement the following logical units (LU's) for the PEP/8 ALU: use Fig. 10.59(attached) as a guideline
   a) LU5, A **AND** B
   b) LU7, A **OR** B
   c) LU9, A **XOR** B

Figure 10.52



(a) Block diagram.



(b) Implementation.

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Figure 10.59
Arithmetic Unit

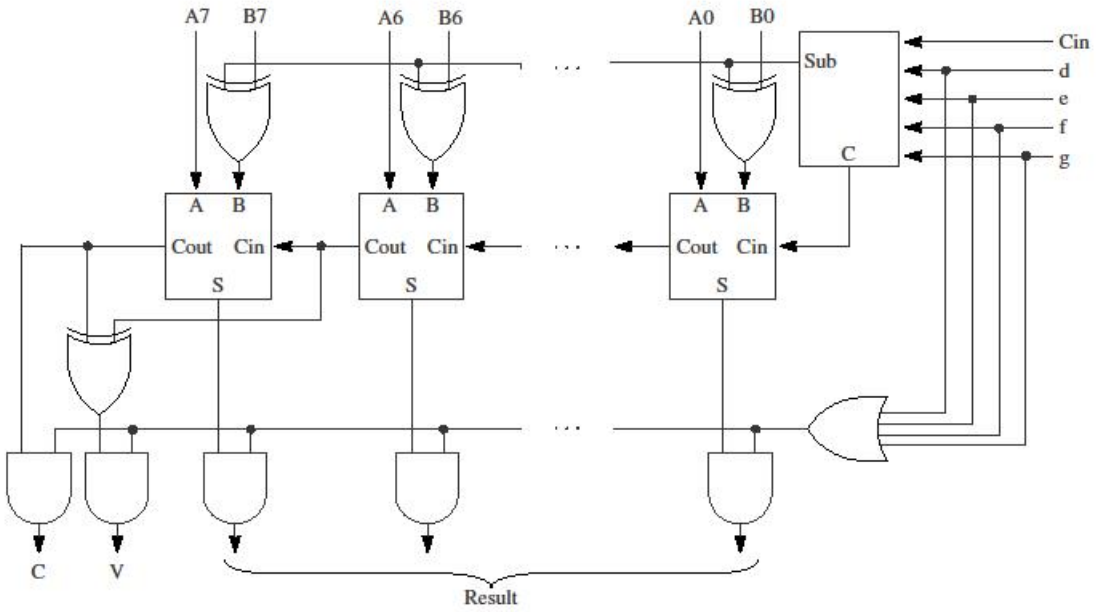


Figure 10.62

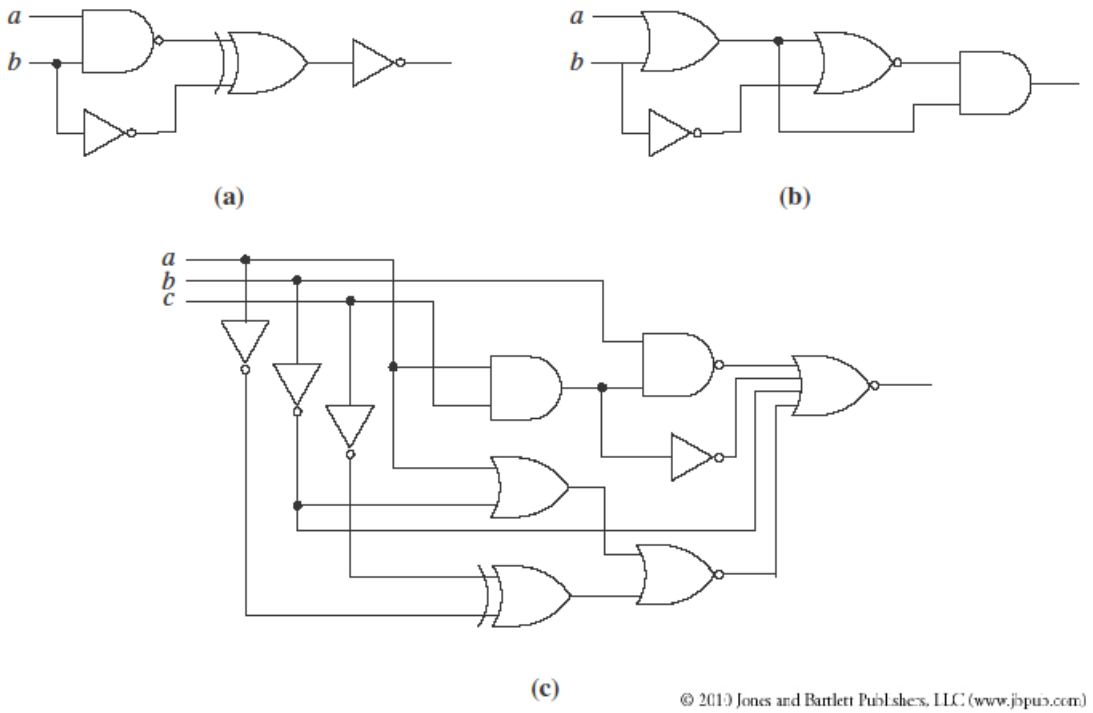
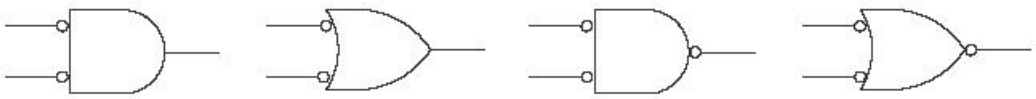


Figure 10.63



(a) (b) (c) (d)