

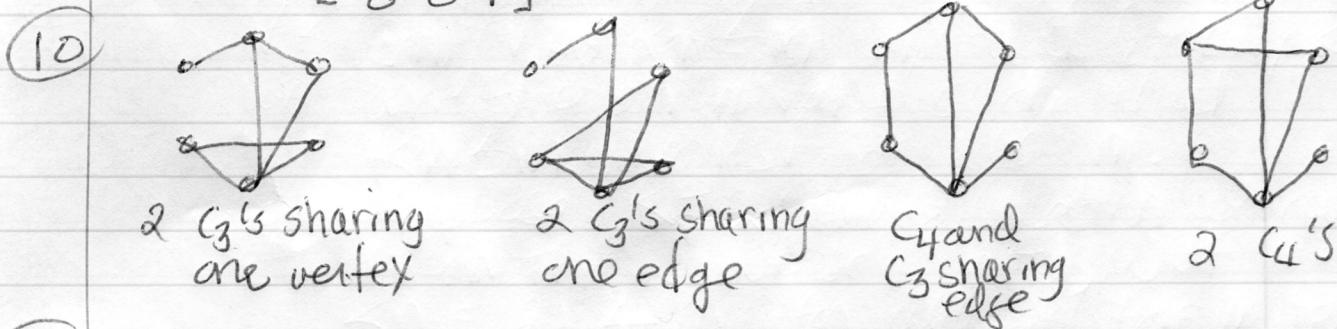
- 6) (a) Inverse of $q \rightarrow p$ is $\sim q \rightarrow \sim p$,
which is the contrapositive of $p \rightarrow q$
(b) The contrapositive of the inverse
of p is necessary for q is the
contrap. of the inverse of $q \rightarrow p$
= contrap of $\sim q \rightarrow \sim p$ = same as $p \rightarrow q$

7) Codeword distance of 12 defects upto 1 errors,
corrects up to r errors where $12 \geq 2r+1$
so $r=5$

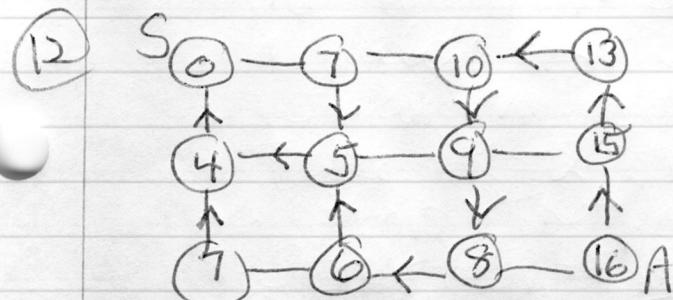
- 8) Multiply 000, 001, 010, ..., 111 times the matrix
to get the codewords shown in the answer
in back of the book.

$$A^* = \begin{bmatrix} 0 & 0 & 1 \\ 0 & 1 & 1 \\ 1 & 1 & 1 \\ 1 & 0 & 0 \\ 0 & 1 & 0 \\ 0 & 0 & 1 \end{bmatrix}, (010101), A^* = (110),$$

so it is not a codeword



- 11) A, B have Ham. cycle; A, C have Euler circuit



arrows show previous vertex