1. Quiz for Chapter 2&3

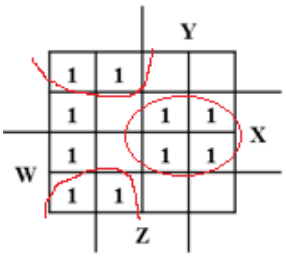
1) The gate input cost G of function $F = AB(C+D)+C(B\overline{D}+\overline{A}D)$ is ____.

A. 15 B. 14 C. 13 D. 12

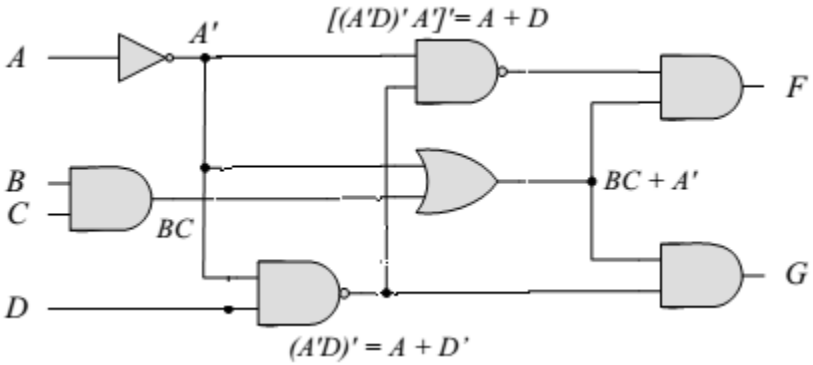
answer: A.

2) The Essential Prime Implicants in the K-Map given below are _____.

A. Y'Z', XZ' B. X'Y', XY C. XY, XZ' D. Y'Z', X'Y'



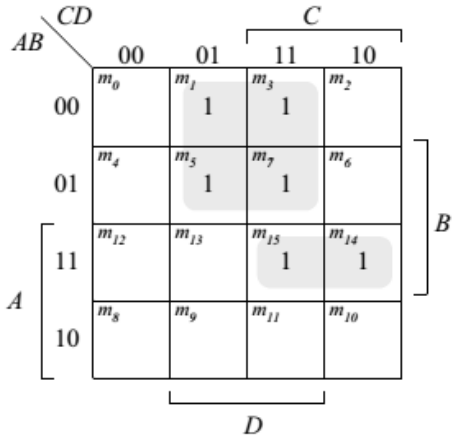
answer: B.



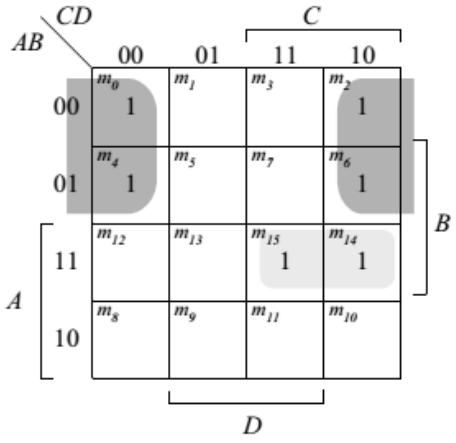
3) Obtain the simplified Boolean expressions for output F in terms of the input variables for the above logic circuit diagram.

$F = (A + D)(A' + BC) = A'D + ABC + BCD += A'D + ABC$

$F = (A + D')(A' + BC) = A'D' + ABC + BCD' = A'D' + ABC$

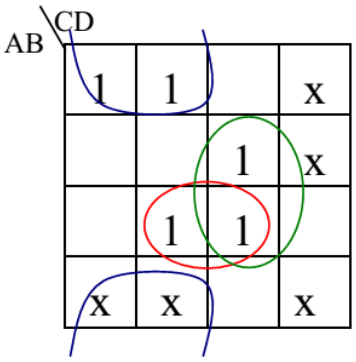


$F = A'D + ABC + BCD = A'D + ABC$



$G = A'D' + ABC + BCD' = A'D' + ABC$

4) Optimize the following Boolean functions F together with the don't-care conditions: $F(A, B, C, D) = \Sigma_m(0, 1, 7, 13, 15) + \Sigma_d(2, 6, 8, 9, 10)$



$$F = \overline{B}\overline{C} + ABD + BCD$$