



DELD – Tutorial 8



ECED SVNIT

Question - 1

Show the logic required to convert a 10-bit Gray code to binary and use that logic to convert the following Gray code words to binary:

(a) 1010111100 (b) 1111000011 (c) 1011110011 (d) 1000000001



Question - 2

Simplify the Boolean function

$$F(W, X, Y, Z) = \Sigma m(1, 3, 7, 11, 15)$$

and the don't-care conditions

$$d(W, X, Y, Z) = \Sigma m(0, 2, 5)$$



Question - 3

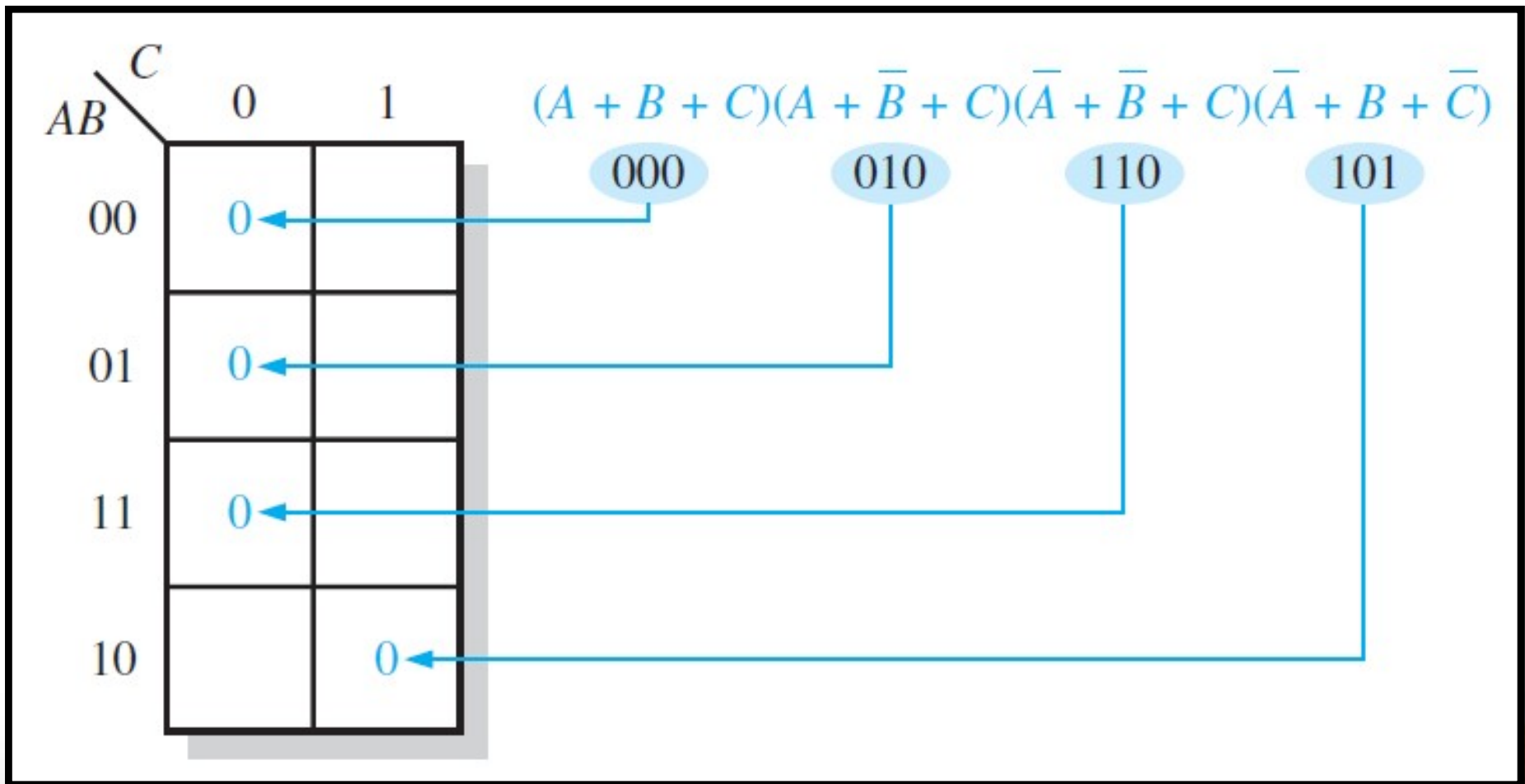
Use a Karnaugh map to minimize the following standard POS expression:

$$(A + B + C)(A + B + \overline{C})(A + \overline{B} + C)(A + \overline{B} + \overline{C})(\overline{A} + \overline{B} + C)$$

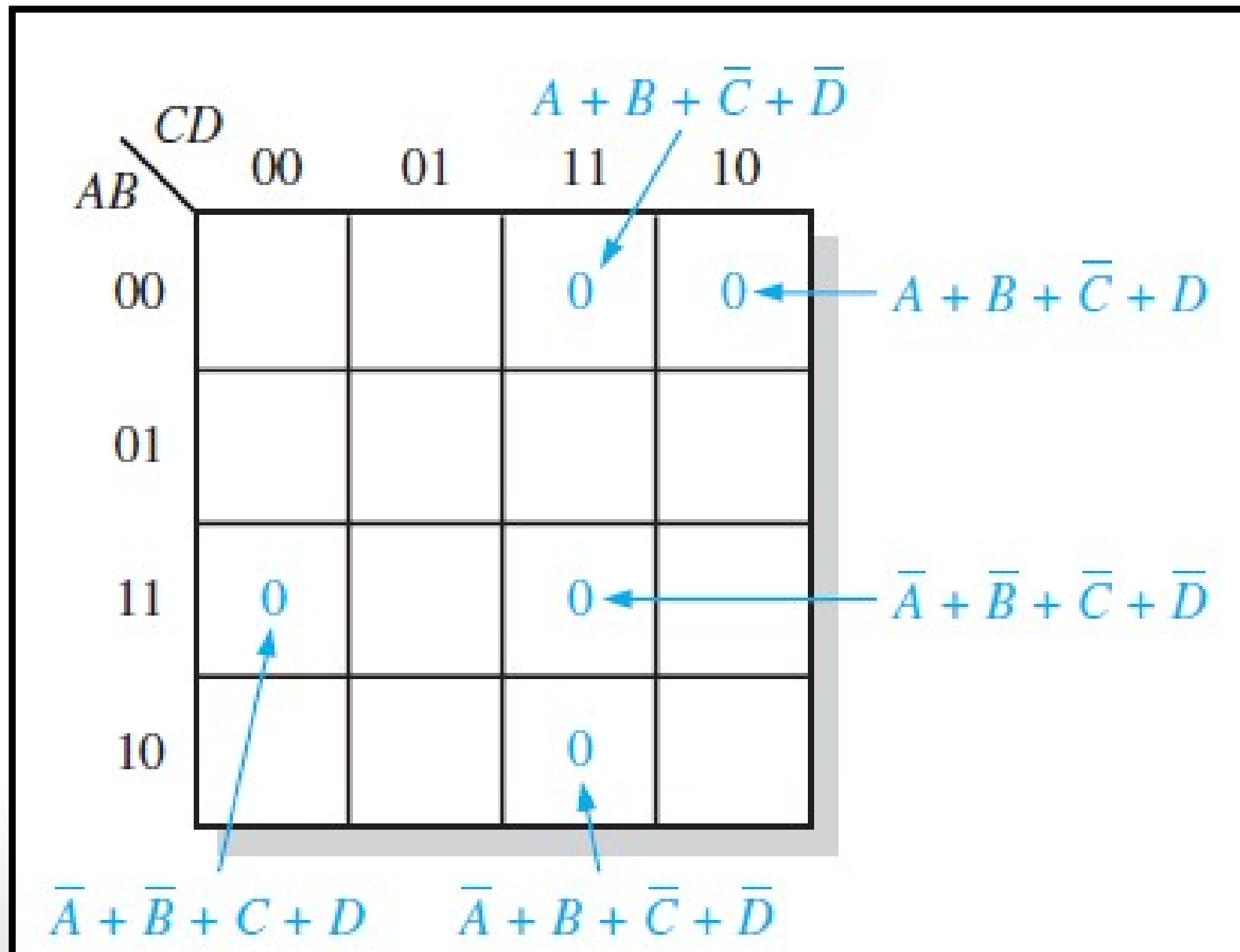
Also, derive the equivalent SOP expression.



Mapping of POS



Writing Output Expression For POS



Question - 4

- **Design and implement Full-Adder and Full-Subtractor Circuits using Multiplexers.**



Question - 5

Implement the following Function using 8X1 Multiplexer

$$F(A, B, C, D) = \Sigma(0, 1, 3, 4, 8, 9, 15)$$



**Wishing U all a Very
Happy Diwali**

