

Q4. The Programmable Array Logic is used to implement the following Boolean functions:

$$W = ABC' + A'B'CD'$$

$$X = A + BCD$$

$$Y = A'B + CD + B''D'$$

$$Z = ABC' + AC'D' + A'B'C'D + A'B'CD'$$

The OR gate in each section of the PAL can take a maximum of three product terms. If one section of the PAL takes 5 ns, compute the worst-case delay required to compute all four functions. [5]