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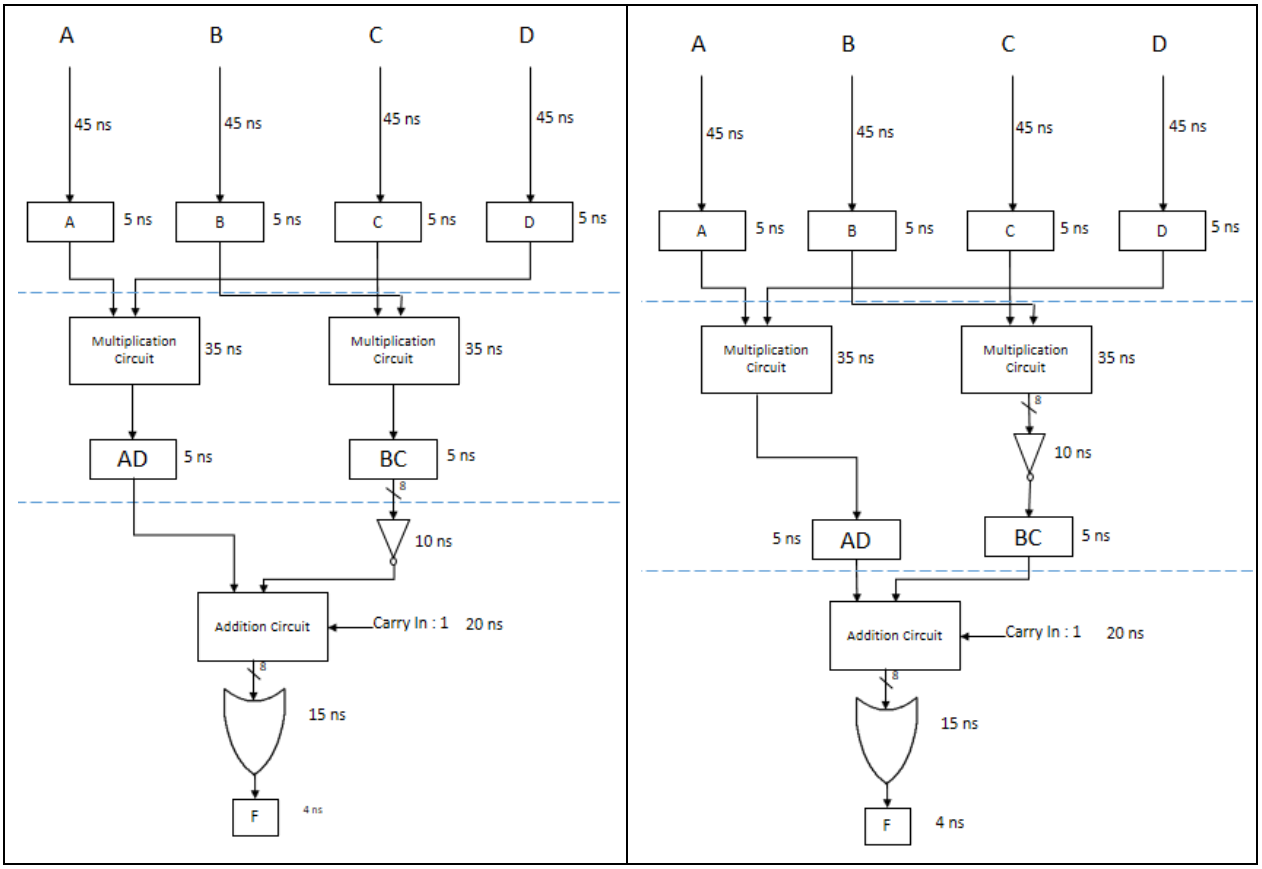
BLG 322E COMPUTER ARCHITECTURE
HOMEWORK 1 SOLUTIONS

a-) Two different pipelines can be designed. Cycle time is 50 ns.



b-) Completion time without pipelining: 45+ 35 + 10 + 20 + 15 + 4 = 129

$$S = \frac{10 * 129}{12 * 50} = 2.15$$

c-) If operation count approaches to infinity, waiting period for the first operation can be disregarded. Thus, averagely for every cycle time an operation is completed. The answer is 50 ns.