Abdurrahman BULUT 1901042258 CSE 331-503 Final Exam

I hereby pledge that I will strictly adhere to academic integrity codes and the work done on this examination is solely my own and I will not receive/give any help from/to anybody or source during this examination.

Q1)

a)

$$\text{Exec time} = \frac{4GHz}{4\times10^7} = \frac{4\times10^6}{4\times10^7} = 10^{-1} = 0{,}1\ s$$

Exec. time = Instruction count $\times \frac{1}{\text{clock rate}}$

b)

AMAT = Hit time + (Miss rate × miss penalty)

Hit time + (0,08 × 80 × 0,3 + 0,02 × 40)

(0,08: %8, 80: 80 stall — Data cache; 0,02 × 40 — Instruction)

4 GHz = Hit time + (1,92 + 0,8)

4 = Hit time + (2,72)

Hit time = 1,28 s.

I 1,92 + I.0,8 = 2,72 I

4 GH + 2,72 = 6,72 GH

$$\frac{6{,}72\times10^6}{4\times10^7} = 1{,}83\ s$$