ECON Assignment 7

① Net income = 500000 − 350000
= 150000

a) Tax rate = 20
$D_{sl} = \frac{110000 - 0}{10}$
= 11000

∴ (500000 − 350000) 0.2 − 11000 · 0.2
= 27800 AV

b) $\frac{110000 - 0}{7}$
= 15714.29

(500000 − 350000) 0.2 − 15714.29 · 0.2
= 26857.14

c) 110000(0.2)
= 22000

(500000 − 350000) 0.2 − 22000 · 0.2
= 25600

d) 110000(0.3)
= 33000

(500000 − 350000) 0.2 − 33000 · 0.2
= 23400

e) 110000

(500000 − 350000 − 110000) 0.2
= 8000

f) The government would, of course, prefer the first option (a) as they would receive more tax dollars. Intuitively, this is not ideal for the company. Since they want to minimize costs option (e) would be preferable for the company

(2)

a)

Year	Purchases / Adjustment to UCC	BASE UCC	CCA	UCC Remaining	Tax Savings
2020	6000	3080	900	5100	450
2021	7000	8600	2580	9520	1290
2022	0	9520	2856	6664	1428
2023	0	6664	1999.2	4664.80	999.60
2024	0	4664.80	1399.44	3265.36	699.72
2025	5000 -1000	5265.36	1579.61	5685.75	789.80
2026	-1000	4685.75	1405.73	3280.02	702.86
2027	0	3280.02	984.01	2296.01	492.003

b)

Year	Purchases	Base UCC	CCA	UCC Remaining	Tax Savings
2020	6000	6000	1800	4200	900
2021	7000	11200	3360	7840	1680
2022	0	7840	2352	5488	1176
2023	0	5488	1646.40	3841.6	823.20
2024	0	3841.6	1152.48	2689.12	576.24
2025	4000	6689.12	2006.74	4682.38	1003.76
2026	-1000	3682.38	1104.71	2577.67	552.36
2027	0	2577.67	773.30	1904.37	386.65

c) 5%. tax savings

$$CTF = 1 - \frac{td(1+i/2)}{(i+d)(1+i)}$$

$$i = \frac{0.5(0.3)(1+\frac{0.05}{2})}{(0.05+0.3)(1+0.05)}$$

$$= 0.418367346$$

$$CSF = 1 - \frac{td}{(i+d)}$$ ← tax paid

$$= 0.571428572$$

$$6000(CTF) + 1000(CSF)(P/F, 10.05, 5) + 1000(CSF)(P/F, 0.05, 6)$$

$$= 6000(0.418367346) + 1000(0.571428572)(0.78353) + 1000(0.571428572)(0.74622)$$

$$= 3384.35$$