

MCQs:

1. B
2. B
3. C
4. A
5. E
6. E
7. D
8. B
9. D
10. C

QUESTION 1:

Revenue:

$$PV = \$ (200,000/1.035)/(0.095-0.05) = \$4,294,149.222$$

Labour:

$$PV = \$ (100,000/1.035)/(0.095-0.04) = \$1,756,697.409$$

Other costs

$$PV = \$ (40,000/1.035)/(0.095+0.015) = \$351,339.4818$$

Rent

$$\text{Nominal rate} = 1.035 \times 1.095 - 1 = 0.133325$$

$$PV = \$24,000/0.1333 = \$180,011.2507$$

$$NPV = \$2,006,101.081$$

QUESTION 2:

Please see your class notes or textbook

Question 3:

The Cross over Rate can be calculated as:

-5000	5000	500	500	
-5000	500	500	6000	
0	4500	0	-5500	10.55%

The IRR for project A is 16.04% and for project B it is 12.94%. If the discount rate is less than 10.55%, then project B will have a higher NPV than project A, however if the discount rate is higher than the cross over rate, then project A will have higher NPV than project B.

Question 4:

a) $D1 = D0 \cdot (1+g)$

$$D1 = 5 \cdot 1.25 = 6.25$$

$$D11 = 5 \cdot 1.25^{10} \cdot 1.1 = 51.2227$$

$$P0 = 6.25 / (0.15 - 0.25) \cdot (1 - (1.25/1.15)^{10}) + 51.2227 / (0.15 - 0.10) \cdot 1/1.15^{10} = 334.61$$

B)

$$EAR = \left(1 + \frac{0.12}{4}\right)^4 - 1 = 0.1255$$

Present value of payments he should have made:

$$1500 \times 1.1255 + \frac{2500}{1.1255^2} = 3661.804$$

This should equal

$$3661.804 = \frac{1000}{1.1255^{0.5}} + \frac{2x}{1.1255^{1.5}} + \frac{x}{1.1255^3}$$

$$X = 1144.28$$

$$2X = 2288.56$$