

Assignment 8

60 Points

PROBLEM 1: (15 Points)

The six alternatives shown here are being evaluated by the rate of return method.

Alternative	Initial Investment, \$	ROR Vs. DN, %	Incremental Rate of Return, %					
			A	B	C	D	E	F
A	-65000	18.3		29	13.4	6.7	7.8	2.9
B	-48000	12.6			18	11.9	0	13.2
C	-90000	21.3				15.8	13	8.6
D	-73000	15.8					9.4	16
E	-81000	19.6						15
F	-69000	17.4						

- If the alternatives are mutually exclusive and the MARR is 16% per year, which alternative should be selected?
- If the alternatives are mutually exclusive and the MARR is 20% per year, which alternative should be selected?
- If the alternatives are independent and the MARR is 15% per year, which alternative(s) should be selected?

PROBLEM 2: (20 Points)

A company is considering buying a high-end Nano particle generator for a project they are undertaking. Five models are available with estimated capital investment, annual operating and maintenance costs, expected revenue and salvage value at the end of 4-year project life given in the table below. The company uses a MARR of 15% per year. Determine which copier the company should acquire based on an incremental rate of return analysis.

Model	Initial Investment, \$	O & M \$/Year	Annual Revenue, \$	Salvage Value, \$
A	-3600000	400000	1800000	600000
B	-3500000	460000	1900000	600000
C	-4000000	500000	2300000	900000
D	-3200000	440000	1700000	500000
E	-3800000	420000	2100000	700000

PROBLEM 3: (10 Points)

A company is considering obtaining services from a vendor. The vendor has three option packages that you can select:

1. Pay full amount of \$320,000 now,
2. Pay \$800,000, 6 years from now, or
3. Pay an amount of money 6 years from now that will have the same purchasing power as \$650,000 now.

The company wants to earn a real interest rate of 10% per year when the inflation rate is 5% per year, which offer should it accept?

PROBLEM 4: (15 Points)

9 years ago a company purchased \$150,000 depreciable assets with an estimated salvage of \$10,000. For tax depreciation, the SL method with $n=9$ years was used, but for book depreciation, the company applied the DDB method with $n=6$. The company sold the assets today for \$15,500.

(a) Compare the sales price today with the book values using the SL and DDB methods.

(b) If the salvage of \$15,500 had been estimated exactly 9 years ago, determine the depreciation for each method in year 9.