Name:

|  |  |  |
| --- | --- | --- |
| Problem | Points | Score |
| 1(a) | 10 |  |
| 1(b) | 10 |  |
| 1(c) | 10 |  |
| 2 | 30 |  |
| 3(a) | 10 |  |
| 3(b) | 10 |  |
| 3(c) | 20 |  |
| Total | 100 |  |

Notes:

1. The exam is closed books and notes except for one double-sided sheet of notes. You are allowed the use of a calculator, interest tables or MS Excel on this exam.
2. Please indicate clearly your answer to the problem. Circle your answers.
3. The details of your solutions are more important than the answers. Please explain your solutions clearly and include as many details as possible.
4. A snow-cone machine at an ice-cream shop costs $15,000. The machine is expected to generate profits of $2,500 each year of its 10- year useful life. At the end of the 10 years, the machine will have a salvage value of 0.

(a) Construct a spreadsheet that shows the cash flow diagram and indicates the balance at the end of the 10-year period.

(b) What is the IRR for this investment?

(c) Assuming a MARR of 10%, what is the present worth of this investment?

1. Consider the following data for 2007 from an after-tax cash flow analysis:

Before Tax Cash Flow = $20,000

Loan Principal Payment = $4,018

Depreciation Deduction = $8,920

Taxable Income = $8,018

Taxes Due = $2,726

After Tax Cash Flow = $10,194

What is the loan interest payment for 2007?

1. A surface mount PCB placement/ soldering line is to be installed for $ 1.6 million. It will have a salvage value of $ 100,000 after 5 years. Determine the depreciation deduction and the resulting unrecovered investment during each year of the asset’s life.

(a) Use straight-line depreciation.

(b) Use declining-balance depreciation, with a rate that ensures the book value equals the salvage value.

(c) Use double declining balance, switching to straight-line depreciation.