IE 342 STUDY SET 5
FALL 2016

Do not submit your solutions as they will not be graded!

1. Consider an asset that costs $132,000 with a useful life of 5 years and a salvage value of $20,000. Compute the annual depreciation allowances and the resulting book values, using
   (a) The straight-line depreciation method.
   (b) The double-declining-balance method.

2. The double-declining-balance method is to be used for an asset with a cost of $68,000, an estimated salvage value of $12,000, and an estimated useful life of six years.
   (a) What is the depreciation for the first three fiscal years, assuming that the asset was placed in service at the beginning of the year?
   (b) If switching to the straight-line method is allowed, when is the optimal time to switch?

3. Zerex Paving Company purchased a hauling truck on January 1, 2005, at a cost of $32,000. The truck has a useful life of eight years with an estimated salvage value of $5,000. The straight-line method is used for book purposes. For tax purposes, the truck would be depreciated with the MACRS method over its five-year class life. Determine the annual depreciation amount to be taken over the useful life of the hauling truck for both book and tax purposes.

4. The Harris Foundry Company purchased new casting equipment in 2006 at a cost of $220,000. Harris also paid $35,000 to have the equipment delivered and installed. The casting machine has an estimated useful life of 12 years, but it will be depreciated with MACRS over its seven-year class life.
   (a) What is the cost basis of the casting equipment?
   (b) What will be the depreciation allowance in each year of the seven-year class life of the casting equipment?

5. A coal mine expected to contain 6.5 million tons of coal was purchased at a cost of $30 million. One million tons of coal are produced this year. The gross income for this coal is $600,000, and operating costs (excluding depletion expenses) are $450,000. If you know that coal has a 10% depletion allowance, what will be the depletion allowance for
   (a) Cost depletion?
   (b) Percentage depletion?

6. In tax year 1, an electronics-packaging firm had a gross income of $25,000,000, and 5,000,000 in salaries, $4,000,000 in wages, $800,000 in depreciation expenses, a loan principal payment of $200,000, and a loan interest payment of $210,000. Determine the net income of the company in tax year 1.

7. Van-Line Company, a small electronics repair firm, expects an annual income of $70,000 from its regular business. The company is considering expanding its repair business to include personal computers. The expansion would bring in an additional annual income of $30,000, but will require an additional expense of $10,000 each year over the next three years. Using applicable current tax rates, answer the following:
   (a) What is the marginal tax rate in tax year 1?
   (b) What is the average tax rate in tax year 1?

8. In year 0, an electrical appliance company purchased an industrial robot costing $300,000. The robot, to be used for welding operations and classified as seven-year recovery property, has been depreciated by the MACRS method. If the robot is to be sold after five years, compute the amounts of gains (losses) for the following three salvage values (assume that both capital gains and ordinary incomes are taxed at 34%):
   (a) $10,000.
   (b) $125,460.
   (c) $200,000.