**ENGINEERING ECONOMY RESPONSE #7**

**Duration 1 Week**

**Due Date: Monday, 30th December 2013 – 10 AM WPSMI**

**PROBLEM 1**

An asset has a first cost of 13,000 TL, an estimated life of 15 years, and an estimated salvage value of 1,000 TL. Using the straight-line method, find:

a) The annual depreciation charge,

b) The annual depreciation rate expressed as a percentage of first cost, and

c) The book value at the end of 9 years.

**PROBLEM 2**

An asset has a first cost of 22,000 TL, an estimated life of 30 years, and an estimated salvage value of 2,000 TL. Using the double declining balance method, find:

a) The depreciation charge in the first year,

b) The depreciation charge in the 6th year, and

c) The book value at the end of 6th.

**PROBLEM 3**

An asset has a first cost of 9,000 TL, an estimated life of 12 years, and an estimated salvage value of 1,200 TL. It is to be depreciated by the sum-of-the-years-digit method. What will be the depreciated charge?

a) in the first year and;

b) in the 7th year?

c) What will be the book value at the end of 6 years?

**PROBLEM 4**

A company has purchased a numerically controlled machine for 150,000 TL. It is estimated that it will have a salvage value of 50,000 TL four years from now. What rate must be used with the declining-balance method of depreciation so that the book value of the machine will be equal to its salvage value at the end of its life?

a) Using the rate just calculated with declining-balance depreciation find the depreciation and book value for each year of the machine’s life,

b) Compare those figures with similar figures for straight-line and sum-of-the years-digits depreciation.

**PROBLEM 5**

A piece of equipment that cost 5,000 TL was found to have a trade-in value of 4,000 TL at the end of the first year, 3,200 TL at the end of the second year, 2,560 TL at the end of the third year, 2,048 TL at the end of the fourth year. Determine the depreciation that occurred during each year.

**PROBLEM 6**

A firm purchases a computer for 2,000,000 TL. It has a life of 9 years and a salvage value of 200,000 TL at that time. Determine the depreciation charge for year 6 and the book value at the beginning of year 6, using:

a) Straight line depreciation

b) Declining balance depreciation

c) Sum of the years digits depreciation

**PROBLEM 7**

A new 250,000 TL automobile will depreciate over the next 5 years approximately according to the sum of the year’s digit method with the first year depreciation being 50,000 TL.

a) Determine the salvage value at the end of 5-year period.

b) Determine the year-end book value for each year.

**PROBLEM 8**

A bulldozer has a first cost of 350,000 TL with an estimated life of 5 years. The salvage value at the end of 5 years is estimated to be 50,000 TL. What is the book value of this bulldozer at the end of 3rd year? Use:

a) The straight line method.

b) The double-declining-balance method

c) The declining balance method (R = 1 - *n F* / *P* )

d) The sum-of-the-years-digit method.