Solution for Assignment 5

1. The method of computing depreciation in which it is assumed that the loss in value of the asset is constant every year is
   a. Straight line method
   b. Sinking fund method
   c. Sum-of-year digit method
   d. Declining balance method

2. Of the following method of depreciation, the method in which annual cost of depreciation is a fixed percentage of the book value at the beginning of the year is
   a. Straight line method
   b. Sinking fund method
   c. Sum-of-year digit method
   d. Declining balance method

3. In SOYD (Sum of Years Digits) method of computing depreciation, the formula for finding the sum of years' digits is (n is life of the asset in years)
   a. n(n-1)
   b. n(n+1)/2
   c. n(n-1)/2
   d. n(n+2)/2

4. The type of depreciation due to which there is reduction in the physical ability of an equipment or asset to produce results is
   a. Functional depreciation
   b. Design depreciation
   c. Physical depreciation
   d. Demand depreciation

5. Reduction of the value of certain natural resources such as mines, oil, timber, quarries, etc. due to the gradual extraction of its contents is known as
   a. Depletion
   b. Inflation
   c. Depreciation
   d. Deflation

6. Under the depletion allowance method in computing depreciation, the depletion charge is equal to either _____, whichever is smaller.
   a. Fixed percentage of gross income or the net taxable income
   b. Fixed percentage of gross income or 50% of the net taxable income
   c. 50% of the fixed percentage of gross income or 50% of the net taxable income
   d. 50% of the fixed percentage of gross income or the net taxable income

7. A machine purchased for Rs. 45,000, has a depreciable life of 4 years. It will have an expected salvage value of Rs. 5,000 at the end of the depreciable life. If the sum-of-the years'-digits (SOYD) method is used, the depreciation amount for year 2 will be
   a. Rs. 11,000
   b. Rs. 10,000
   c. Rs. 12,000
   d. Rs. 18,000

   Solution: SOYD = 4x5/2 =10

   D_2 = 3/(SOYD) x (45000 – 5000) = 12000

8. A machine with cost of Rs. 1,04,000 is estimated to provide 3,000 hours of service during its life, after which it will have zero salvage value. If the machine is used for 1,200 hours during first year, the depreciation charge during first year will be
   a. Rs 20,800
   b. Rs 21,200
   c. Rs 41,600
   d. Rs 52,000

   Solution: Unit depletion charge = 104000/3000 Rs/hr
   Depreciation charge for 1^{st} year = D_1 = Unit depletion charge x Working hours
   = (104000/3000) x 1200 = 41600

9. For an asset that has first cost of Rs. 1,00,000, salvage value Rs. 40,000 and a 10-year recovery period, the book value at the end of year 4 according to the MACRS method would be (d_t values for years 1, 2, 3, 4, and 5 are 10.00%, 18.00%, 14.40%, 11.52%, and 9.22%, respectively):
   a. Rs. 58,700
   b. Rs. 62,400
   c. Rs. 53,920
   d. Rs. 46,080

   Solution: First cost = 100000, Salvage Value = 40000,
   $B_4 = \{1 – (0.10 + 0.18 + 0.144 + 0.1152)\}$ x 100000
   = 46080

10. An asset had first cost of Rs 60,000 and salvage value of Rs 5,000 after 11 years. If it is depreciated by the basic declining-balance method using a rate of 10%, the depreciation charge in the tenth year will be
   a. Rs 2,324
   b. Rs 2,092
   c. Rs 2,856
   d. Rs 3,432

   Solution: Given, $\alpha = 0.1$, $n = 10$, $P = 60000$
   $D_n = \alpha (1- \alpha)^{n-1} . P$
   $D_{10} = 0.1 (0.9)^9$ x 60000 = 2324