**Assignment No. 3**

**Course: Accounting and Finance Due date: 29-11-2022**

**Instructions:** Please submit your assignment in both hard and soft form within the due date.

**Question No. 1 (15 Points)**

Give answers to the following questions:

1. What is simple interest?
2. What is compound interest? Why is it important?
3. Define present value and future value
4. What is an annuity? Define its types
5. What is capital budgeting? Explain different Capital Budgeting techniques

**Question No. 2 (5+5= 10 points)**

Emerson Commack wishes to purchase an annuity contract that will pay him $7,000 a year for the rest of his life. The Philo Life Insurance Company ﬁgures that his life expectancy is 20 years, based on its actuary tables. The company imputes a compound annual interest rate of 6 percent in its annuity contracts.

1. How much will Cammack have to pay for the annuity?
2. How much would he have to pay if the interest rate were 8 percent?

**Question No. 3 (5+5= 10 points)**

Joe Hernandez has inherited $25,000 and wishes to purchase an annuity that will provide him with a steady income over the next 12 years. He has heard that the local savings and loan association is currently paying 6 percent compound interest on an annual basis. If he were to deposit his funds, what year-end equal-dollar amount (to the nearest dollar) would he be able to withdraw annually such that he would have a zero balance after his last withdrawal 12 years from now?

**Question No. 4 (5 points)**

You need to have $50,000 at the end of 10 years. To accumulate this sum, you have decided to save a certain amount at the *end* of each of the next 10 years and deposit it in the bank. The bank pays 8 percent interest compounded annually for long-term deposits. How much will you have to save each year (to the nearest dollar)?

**Question No. 5 (10 points)**

Two mutually exclusive projects have projected cash ﬂows as follows:

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1. Determine the internal rate of return for each project.
2. Determine the net present value for each project at discount rates of 5 percent.
3. Which project would you select? Why? What assumptions are inherent in your decision?

**Question No. 6 (10 points)**

A manufacturer is considering the purchase of one of two machines, X and Y. The machine will be installed in the manufacturer’s factory and will produce items for sale. Both machines take exactly the same input and produce exactly the same final product. The only difference between the machines is that one is more efficient and therefore has lower operating costs, resulting in higher net cash flows. Assume that the required rate of return is 12% and that the firm has excess debt capacity (i.e., it can borrow as much as it likes to finance any profitable investment). The cash flows of each of the projects are as follows:

Machine “X” has an initial costing of $5000 and cash inflows of $1500 at the end of each of the next 6 years.

Machine “Y” has an initial costing of $4000 and cash inflows of $900 at the end of each of the next 6 years.

**Calculations are required:**

1. Calculate the payback period for each project.
2. Calculate the NPV of each project and assess its acceptability.
3. Calculate the IRR for each project and assess its acceptability.
4. Evaluate and discuss the rankings of the two projects on the basis of your findings in parts a, b, and c.