

Assignment Module 4

This assignment is mandatory and will therefore be evaluated as part of your final grade. This assignment must be completed individually. Before attempting the assignment, you should study the module's content.

Question 1: This question has two parts a) and b). Refer to the table below to answer them. Please submit answers in Excel.

Assume the following for all questions:

Year (t)	Project A	Project B	Project C
0	-\$2,000	-\$5,000	-\$3,000
1	500	300	400
2	500	300	400
3	1,500	7,000	2,500

Projects are mutually exclusive; $r=5\%$, 10% , and 15% .

- a. Calculate for each project:
 1. Payback period
 1. Discounted payback period
 1. Net present value
 1. IRR
- a. Indicate which project you would undertake. Justify your answer with one sentence.

Question 2: Investment and financing decisions. Which of the following assets are real assets and which are financial assets?

- a. A stock
- a. A promissory note
- a. A trademark
- a. A factory
- a. Undeveloped land
- a. The balance of the company's current account
- a. Experienced sales personnel and workers
- a. A corporate bonus

Question 3: Future Value. If you invest \$100 at an interest rate of 15%, how much will you have at the end of eight years?

Question 4: Present Value. How much must be invested today at 3% for an investor to receive \$1,000 in three years?

Question 5: Cash Flows. Which of the following cash flows should be considered incremental when deciding when to invest in a new manufacturing plant? The land is already owned by the company, but the building on it would have to be demolished.

- a. The market value of the land and the existing buildings
- a. Demolition and land clearing costs
- a. The cost of a new access road built last year
- a. Lost profits on other products due to management time spent on the new facility
- a. A portion of the cost of leasing the president's airplane
- a. The future depreciation of the new factory

- a. The reduction in the company's tax bill derived from the tax depreciation of the new factory-
- a. The initial investment in raw material inventories
- a. The money already spent on the engineering design of the new factory-

Question 6: Project NPV and IRR. A project requires an initial investment of \$100,000 and is expected to produce a cash inflow before tax of \$26,000 per year for five years. Company A has substantial accumulated tax losses and is unlikely to pay taxes in the foreseeable future. Company B pays corporate taxes at a rate of 35% and can depreciate the investment for tax purposes using the five-year MACRS tax depreciation schedule. Suppose the opportunity cost of capital is 8%. Ignore inflation.

- a. Calculate project NPV for each company.
- a. What is the IRR of the after-tax cash flows for each company? What does comparison of the IRRs suggest is the effective corporate tax rate?