**iAcademy**

**Basic Finance**

**Assessment 5: Capital Budgeting**

*Part I (True or False): Write* ***True*** *if the statement is correct and* ***False*** *if the statement is incorrect*

1. Capital budgeting is the process of evaluating and selecting short-term investments consistent with the firm’s goal of owner wealth maximization. **False**
2. If a firm has unlimited funds to invest, all the independent projects that meet its minimum investment criteria can be implemented. **True**
3. Independent projects are projects that compete with one another, so that the acceptance of one eliminates the others from further consideration. **False**
4. One strength of payback period is that it takes fully into account the time factor in the value of money. **False**
5. The net present value is found by subtracting a project's initial investment from the present value of its cash inflows discounted at a rate equal to the project's internal rate of return. **False**
6. The internal rate of return (IRR) is defined as the discount rate that equates the net present value with the initial investment associated with a project. **False**
7. If net present value of a project is greater than zero, the firm will earn a return greater than its cost of capital. Such a project should enhance the wealth of the firm's owners. **True**
8. Since the cost of capital tends to be a reasonable estimate of the rate at which the firm could actually reinvest intermediate cash inflows, the use of NPV is in theory preferable to IRR. **True**
9. A Php 600,000 outlay for a new machine with useful life of 10 years is an operating expenditure that would appear as a fixed asset on the firm’s balance sheet. **True**
10. Independent projects are projects that compete with one another, so that the acceptance of one eliminates the others from further consideration. **False**
11. The following three projects are examples of mutually exclusive projects: **False**

a) installing air conditioning in the plant

b) acquiring a small supplier

c) purchasing a new computer system

1. If a firm has unlimited funds to invest, all the independent projects that meet its minimum investment criteria can be implemented. **True**

*Part II (Problem Solving): Solve for what is required in each problem. Show solutions in good form. No solution, no point. 3 points for every correct answer with complete solution. Round off final answers up to 2 decimal places.*

Problem A:

A firm is evaluating a proposal which has an initial investment of Php 35,000 and has cash flows of Php 10,000 in year 1, Php 20,000 in year 2, and Php 10,000 in year 3.

1. What is the payback period of the project?

Year 1 = 10,000

Year 2 = 20,000

Year 3 = 5,000 (50% of Year 3 or 6 mos)

**Payback Period = 2.5 years (1+1+0.5)**

Problem B:

A firm must choose from six capital budgeting proposals outlined below. The firm is subject to capital rationing and has a capital budget of Php 1,000,000; the firm's cost of capital is 15%.

Project Initial Investment(Php) IRR NPV (Php)

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1 200,000 19% 100,000

2 400,000 17 20,000

3 250,000 16 60,000

4 200,000 12 (5,000)

5 150,000 20 50,000

6 400,000 14.5 150,000

2. Using Internal Rate of Return approach of ranking projects, which projects should the firm accept?

Acceptable Projects: **5, 1, 2 & 3**

5 150,000 20 50,000

1 200,000 19% 100,000

2 400,000 17 20,000

3 250,000 16 60,000

Total 1,000,000

3. Using Net Present Value Approach of ranking projects, which projects should the firm accept?

Acceptable Projects: **6, 1, 3 & 5**

6 400,000 14.5 150,000

1 200,000 19% 100,000

3 250,000 16 60,000

5 150,000 20 50,000

Total 1,000,000

Problem C:

Operating cash inflows

P50,000 P60,000

P25,000 | |

| P10,000 | P10,000 P10,000 |

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P100,000 (Initial outlay)

4. Given above information and 15 percent cost of capital, what is the net present value and should the project be accepted? Explain with supporting computation.

Year 1 = (25,000 / (1 + 15%)^1) = 21,739.13

Year 2 = (10,000 / (1 + 15%)^2) = 7,561.44

Year 3 = (50,000 / (1 + 15%)^3) = 32,875.81

Year 4 = (10,000 / (1 + 15%)^4) = 5,717.53

Year 5 = (10,000 / (1 + 15%)^5) = 4,971.77

Year 6 = (60,000 / (1 + 15%)^6) = 25,939.66

NPV - Initial = 98,805.26 – 100,000

**NPV = (1,194.74)**

**Project should not be accepted as NPV is less than 0.**

Problem D:

Galaxy Satellite Co. is attempting to select the best group of independent projects competing for the firm's fixed capital budget of Php10,000,000. Any unused portion of this budget will earn less than its 20 percent cost of capital. A summary of key data about the proposed projects follows.

PV of Inflows

Project Initial Investment IRR at 20%

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A Php3,000,000 21% Php3,050,000

B 9,000,000 25 9,320,000

C 1,000,000 24 1,060,000

D 7,000,000 23 7,350,000

Questions:

5. Using the NPV Approach, which best group of projects should be selected?

NPV at 20% - Initial Investment NPV

A 3,050,000 – 3,000,000 50,000

B 9,320,000 – 9,000,000 320,000

C 1,060,000 – 1,000,000 60,000

D 7,350,000 – 7,000,000 350,00

Best Group of Project: **D & A**

D 7,000,000 350,00

A 3,000,000 50,000

10,000,000

6. Using the IRR Approach, which best group of projects should be selected?

Best Group of Project: **B & C**

B 9,000,000 25% 9,320,000

C 1,000,000 24% 1,060,000

10,000,000