

## MCQs

1.

CORRECT

A profitability index (PI) of .92 for a project means that \_\_\_\_\_.

Your

the project returns 92 cents in present value for each current dollar invested (cost)

Answer:

2.

CORRECT

The LMN Corporation is considering an investment that will cost \$80,000 and have a useful life of 4 years. During the first 2 years, the net incremental after-tax cash flows are \$25,000 per year and for the last two years they are \$20,000 per year. What is the payback period for this investment?

Your

3.5 years.

Answer:

3.

CORRECT

Bulging Stomach Restaurants, Inc., has estimated that a proposed project's 8-year net cash benefit will be \$4,000 per year for years 1 through 8, with an additional terminal benefit of \$8,000 at the end of the eighth year. Assuming that these cash inflows satisfy *exactly* Bulging's required rate of return of 8 percent, the project's initial cash outflow is closest to which of the following four possible answers?

Your

\$27,309

Answer:

4.

CORRECT

Which of the following statements is *incorrect* regarding a normal project?

Your

If the PI of a project equals 0, then the project's initial cash outflow equals the PV of its cash flows.

Answer:

5.

CORRECT

Assume that a firm has accurately calculated the net cash flows relating to two mutually exclusive investment proposals. If the net present value of both proposals exceed zero and the firm is not under the constraint of capital rationing, then the firm should \_\_\_\_\_.

Your Answer: accept the proposal that has the largest NPV since the goal of the firm is to maximize shareholder wealth and, since the projects are mutually exclusive, we can only take one

6.

CORRECT

What do we call a formal comparison of the actual costs and benefits of a project with original estimates?

Your Answer: Post-completion audit.

7.

INCORRECT

A project whose acceptance does *not* prevent or require the acceptance of one or more alternative projects is referred to as \_\_\_\_\_.

Your Answer: a dependent project

Correct Answer: an independent project

A dependent project requires the acceptance of one or more additional projects.

8.

CORRECT

When operating under a single-period capital-rationing constraint, you may first want to try selecting projects by descending order of their \_\_\_\_\_ in order to give yourself the best chance to select the mix of projects that adds most to firm value.

Your Answer: profitability index (PI)

9.

CORRECT

Which of the following statements regarding cash flow patterns (for time periods 0, 1, 2, 3, and 4) is correct?

Your Answer: The sequence of -\$50, \$50, \$70, \$60, and -\$150 potentially has at most two internal rates of return.

10.

**CORRECT**

Which of the following statements is correct regarding the internal rate of return (IRR) method?

Your Answer: As long as you are not dealing with mutually exclusive projects, capital rationing, or unusual projects having multiple sign changes in the cash-flow stream, the internal rate of return method can be used with reasonable confidence.

11.

**INCORRECT**

Which of the following is *not* a potential for a ranking problem between two mutually exclusive projects?

Your Answer: The projects have unequal lives that differ by several years.

Correct Answer: One of the mutually exclusive projects involves replacement while the other involves expansion.

This is one of the three main differences that can cause ranking conflicts.

12.

**CORRECT**

The discount rate associated with the single intersection of the NPV profiles of two mutually exclusive projects represents \_\_\_\_\_.

Your Answer: Fisher's rate of intersection

13.

**CORRECT**

An NPV profile for a single project \_\_\_\_\_.

Your Answer: displays the expected NPV for a project at a variety of different discount rates

14.

**CORRECT**

A project whose acceptance precludes the acceptance of one or more alternative projects is referred to as \_\_\_\_\_.

Your Answer: a mutually exclusive project.

15.

**CORRECT**

Two mutually exclusive projects are being considered. Neither project will be repeated again in the future after their current lives are complete. There exists a potential problem though -- the expected life of the first project is one year and the expected life of the second project is three years. This has caused the NPV and IRR methods to suggest different project preferences. What technique can be used to help make a better decision in this scenario?

Your Answer: Rely on the NPV method and make your choice as it will tell you which one is best.

16.

**CORRECT**

To the nearest dollar, what is the net present value of a replacement project whose cash flows are -\$104,000; \$34,444; \$39,877; \$25,000; and \$52,800 for years 0 through 4, respectively? The firm has decided to assume that the appropriate cost of capital is 10% and the appropriate risk-free rate is 6%.

Your Answer: \$15,115

17.

**CORRECT**

A project has the following cash inflows \$34,444; \$39,877; \$25,000; and \$52,800 for years 1 through 4, respectively. The initial cash outflow is \$104,000. Which of the following four statements is correct concerning the project internal rate of return (IRR)?

Your Answer: The IRR is greater than or equal to 14%, but less than 18%.

18.

**CORRECT**

You must decide between two mutually exclusive projects. Project A has cash flows of -\$10,000; \$5,000; \$5,000; and \$5,000; for years 0 through 3, respectively. Project B has cash flows of -\$20,000; \$10,000; \$10,000; and \$10,000; for years 0 through 3, respectively. The firm has decided to assume that the appropriate cost of capital is 10% for both projects. Which project should be chosen? Why?

Your Answer: B; Project B's NPV > Project A's NPV.

19.

**CORRECT**

There are two mutually exclusive projects that have different lives. Project A has a 4-year life and Project B has a 5-year life. In replacement chain analysis, the earliest common

life will occur when Project A is replicated \_\_\_\_\_ times and Project B is replicated \_\_\_\_\_ times.

Your Answer: 5; 4

20.

CORRECT

A project whose acceptance requires the acceptance of one or more alternative projects is referred to as \_\_\_\_\_.

Your Answer: a dependent project

21.

INCORRECT

Utilize the following NPV sensitivity analysis table to answer the question below:  
-10% -5% Base 5% 10% P -20 3 30 61 103 SV 28 29 30 31 32 PP 36 33 30 27 24 NPV is most sensitive to a change in which of the three input variables -- product price (P), salvage value (SV), or purchase price of the asset (PP)?

Your Answer: "SV"

Correct Answer: "P"

The price (P) in this particular example has the greatest sensitivity as one can see that the NPV ranges from -\$20 to +\$103 with changes as small as -/+10%.

## True/False

1.

CORRECT

For a typical project, increasing the discount rate decreases the project's value.

Your True Answer:

2.

CORRECT

The net present value of a project generally increases as the required rate of return decreases.

Your True  
Answer:

3.

CORRECT

Capital rationing occurs when the firm limits funds available for capital budgeting projects.

Your True  
Answer:

4.

CORRECT

A mutually exclusive project is one whose acceptance precludes the acceptance of alternative projects.

Your True  
Answer:

5.

CORRECT

Use of the IRR method implicitly assumes that the project's cash inflows are reinvested at the internal rate of return.

Your True  
Answer:

6.

CORRECT

An analyst is evaluating the impact upon NPV by changing two variables (-/+10%, -/+5%, base case) at a time and placing the results in a two dimensional table. This represents one type of sensitivity analysis.

Your True  
Answer:

And, the table is referred to as a sensitivity matrix.

## Chapter 13

**1.** A profitability index of .85 for a project means that:

- ☐ the present value of benefits is 85% greater than the project's costs.
- ☐ the project's NPV is greater than zero.
- ☒ the project returns 85 cents in present value for each current dollar invested.
- ☐ the payback period is less than one year.

**2.** BackInSoon, Inc., has estimated that a proposed project's 10-year annual net cash benefit, received each year end, will be \$2,500 with an additional terminal benefit of \$5,000 at the end of the tenth year. Assuming that these cash inflows satisfy exactly BackInSoon's required rate of return of 8 percent, calculate the initial cash outlay. (Hint: With a desired IRR of 8%, use the IRR formula:  $ICO = \text{discounted cash flows}$ .)

- ☐ \$16,775
- ☒ \$19,090
- ☐ \$25,000
- ☐ \$30,000

**3.** Woatich Windmill Company is considering a project that calls for an initial cash outlay of \$50,000. The expected net cash inflows from the project are \$7,791 for each of 10 years. What is the IRR of the project? [(Hint: The cash flows from the project are an annuity so you can solve for  $i$  in the equation  $PVA = R(PVIFA_{i,10})$ .)]

- ☐ 6 percent
- ☐ 7 percent
- ☒ 8 percent

- ☒ 9 percent

**4.** Which of the following statements is correct?

- ☐ If the NPV of a project is greater than 0, its PI will equal 0.
- ☐ If the IRR of a project is 0%, its NPV, using a discount rate,  $k$ , greater than 0, will be 0.
- ☒ If the PI of a project is less than 1, its NPV should be less than 0.
- ☐ If the IRR of a project is greater than the discount rate,  $k$ , its PI will be less than 1 and its NPV will be greater than 0.

**5.** Assume that a firm has accurately calculated the net cash flows relating to an investment proposal. If the net present value of this proposal is greater than zero and the firm is not under the constraint of capital rationing, then the firm should:

- ☐ calculate the IRR of this investment to be certain that the IRR is greater than the cost of capital.
- ☐ compare the profitability index of the investment to those of other possible investments.
- ☐ calculate the payback period to make certain that the initial cash outlay can be recovered within an appropriate period of time.
- ☒ accept the proposal, since the acceptance of value-creating investments should increase shareholder wealth.



**6.** A project's *profitability index* is equal to the ratio of the \_\_\_\_\_ of a project's future cash flows to the project's \_\_\_\_\_.

- ☒ present value; initial cash outlay
- ☐ net present value; initial cash outlay
- ☐ present value; depreciable basis
- ☐ net present value; depreciable basis

**7.** The discount rate at which two projects have identical \_\_\_\_\_ is referred to as *Fisher's rate of intersection*.

- ☐ present values
- ☒ net present values
- ☐ IRRs
- ☐ profitability indexes

**8.** Two mutually exclusive investment proposals have "scale differences" (i.e., the cost of the projects differ). Ranking these projects on the basis of IRR, NPV, and PI methods \_\_\_\_\_ give contradictory results.

- ☐ will never
- ☐ will always
- ☒ may

☐

will generally

**9.** If capital is to be rationed *for only the current period*, a firm should probably first consider selecting projects by descending order of \_\_\_\_.

☐

net present value

☐

payback period

☐

internal rate of return

☒

profitability index

**10.** The \_\_\_\_ method provides correct rankings of mutually exclusive projects, when the firm is not subject to capital rationing.

☒

net present value

☐

internal rate of return

☐

payback period

☐

profitability index

**11.** In an *NPV sensitivity graph*, a steep *sensitivity line* for a particular input variable means that a \_\_\_\_ in that variable results in a \_\_\_\_ in NPV.

☒

small percentage change; large change

☐

large percentage change; small change

**12.** One potential problem with sensitivity analysis is that it generally looks at sensitivity "one

variable at a time." However, one way to judge the sensitivity of results to simultaneous changes in two variables, at least, is to construct an \_\_\_\_\_ .



NPV profile



NPV sensitivity matrix



NPV sensitivity graph