

Directions:

- Put your name on your bluebook.
- This exam is to be completed in a bluebook – answers not recorded in a bluebook will not be graded.
- Place the exam on the inside of you bluebook when finished.
- Read the question thoroughly before answering. Point totals for each question are listed.
- Write legibly and express yourself logically. Write short, concise answers.

Question #1

- (a) [4 points]
You have the opportunity to take part in an investment that requires an expenditure of \$3000 now in order to receive \$5000 five years from now. You also have the opportunity to put your money in an account that yields a 7%-per-year interest rate. What investment should you make and why?
- (b) [4 points]
How long will it take for \$1000 to double if the interest rate is 5% per year?
- (c) [4 points]
A credit card advertises its interest rate of 1% per month. Calculate the effective annual interest rate.
- (d) [4 points]
For an interest rate of 18% per year compounded continuously, calculate the effective monthly and annual interest rates.
- (e) [4 points]
You want to buy a car for \$5000 down and deferred annual payments of \$500 a year for 6 years starting 3 years from now. What is the present worth of the investment if the interest rate is 8% per year?
- (f) [4 points]
Your company has been in business for 3 years, with the following net cash flows:

Year	0	1	2	3
Cash Flow	\$2000	-\$500	-\$8100	\$6800

Determine the IRR of your company.

Question #2 [15 points]

Four different building locations have been suggested, of which only one will be selected. Cost and annual net cash-flow information is detailed below. If the MARR is 10%, use the Rate of Return (Challenger-Defender) analysis to select the most economical location.

Location	A	B	C	D
Building Cost	-\$200,000	-\$275,000	-\$190,000	-\$350,000
Annual Cash Flow	\$22,000	\$35,000	\$19,500	\$42,000
Life, years	30	30	30	30

Question #3 [18 points]

The following questions pertain to the Rincon Project.

- (a) What were the objectives of the project?
- (b) What objectives and strategic factors hindered the project's success? And how?
- (c) Discuss several key steps the project developer took to reduce the project's duration.

Question #4 [18 points]

Answer the following briefly and concisely (1 or 2 paragraphs)

- (a) Arrange the following groups into the Design/Bid/Build and Design/Build organizational chart. Discuss the advantages of each of these 2 methods.

Owner
General Contractor
Design Team
Subcontractors
- (b) A subcontractor submits a bid to the general contractor to perform concrete work for a project. The subcontractor states he will do the required work for \$15,000 and it will take 2 weeks. After some deliberation, the general contractor accepts the subcontractor's but asks if he can increase his scope to include waterproofing. Has a contract been formed? Why or why not? If no, what would have to be done in order for a contract to be formed?

- (c) A subcontractor performs some excavation for a contractor under a Design/Bid/Build contract. As soon as the excavation is finished, heavy storms delay the project, reducing the general contractor's cash flow. Lacking the income that was expecting from the project, the general contractor fails to pay the subcontractor. What would you do if you were the subcontractor? What would you do if you were the general contractor?

Question #5 [3 points]

Distinguish between a bonding company and an insurance company.

Question #6 [xx points]

Explain the difference between a balance sheet and an income statement.

Question #7 [xx points]

A firm has identified three potential outcomes for an investment of \$1million. The total returns from each investment plus the profits which will occur in less than 1 year and the associated probabilities are as follows: A = \$1,400,000 with a probability of 20%; B = \$1,200,000 with a probability of 50%; and C = \$500,000 with a probability of 30%.

A consultant could be hired to provide additional information. The past record of the consultant in evaluating similar conditions is given in the table below, where A_c , B_c , and C_c , represent the predictions by the consultant that, respectively, states A, B, and C will occur. The table gives the probability of the consultant's prediction given that the state occurs.

Consultant's Prediction	Occurrence of State		
	A	B	C
A_c	0.8	0.1	0.1
B_c	0.1	0.9	0.2
C_c	0.1	0	0.7

- (a) Construct a decision tree to represent the alternatives, outcomes, and associated probabilities.
- (b) What is the value of perfect information, if it could be obtained?
- (c) What is the amount that could be paid for additional information based on the consultant's record?

Question #7 [xx points]

What are the payback periods for each alternative below?

	A	B
Initial Investment	-\$10,000	-\$15,000
Year 1 Revenue	\$4,000	\$8,000
Year 2 Revenue	\$4,000	\$14,000
Year 3 Revenue	\$4,000	\$10,000

Question #8 [22 points]

Briefly compare and contrast three types of Alternative Dispute Resolution techniques.

Question #9 [xx points]

Name three types of schedules discussed in class and briefly discuss their uses and/or how they differ from one-another.