Question and Problem Sets

Purpose of Assignment

Students should understand the operating and cash cycles of a company, the mechanics in preparing a cash budget, the use of exchange rates and interest rate parity in international finance and valuation of a company in a merger and acquisition.

Assignment Steps

Resources: Tutorial help on Excel® and Word® functions can be found on the Microsoft® Office website. There are also additional tutorials via the web that offer support for office products.

Complete the following Questions and Problems from each chapter as indicated.

Show all work and analysis.

Prepare in Microsoft® Excel® or Word.

- Ch. 18: Questions 3 & 11 (Questions and Problems section)
- Ch. 20: Questions 8 & 14 (Questions and Problems section)
- Ch. 21: Questions 4 & 7 (Questions and Problems section)
- Ch. 26: Questions 1 & 2 (Questions and Problems section): Microsoft® Excel® template provided for Problem 2

Format your assignment consistent with APA guidelines if submitting in Microsoft® Word

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j. The accounts payable balance is reduced.

k. A dividend is paid.

l. Production supplies are purchased and paid for with a short-term note.

m. Utility bills are paid.

n. Cash is paid for raw materials purchased for inventory.

o. Marketable securities are sold.

2. **Cash Equation** [LO3] Mellott Corp. has an equity value of $12,875. Long-term debt is $8,100. Net working capital, other than cash, is $2,750. Fixed assets are $16,590. How much cash does the company have? If current liabilities are $1,960, what are current assets?

3. **Changes in the Operating Cycle** [LO1] Indicate the effect that the following will have on the operating cycle. Use the letter *I* to indicate an increase, the letter *D* for a decrease, and the letter *N* for no change:

   a. Average receivables goes up.

   b. Credit repayment times for customers are increased.

   c. Inventory turnover goes from 3 times to 6 times.

   d. Payables turnover goes from 6 times to 11 times.

   e. Receivables turnover goes from 7 times to 9 times.

   f. Payments to suppliers are accelerated.

4. **Changes in Cycles** [LO1] Indicate the impact of the following on the cash and operating cycles, respectively. Use the letter *I* to indicate an increase, the letter *D* for a decrease, and the letter *N* for no change:

   a. The terms of cash discounts offered to customers are made less favorable.

   b. The cash discounts offered by suppliers are decreased; thus, payments are made earlier.

   c. An increased number of customers begin to pay in cash instead of with credit.

   d. Fewer raw materials than usual are purchased.

   e. A greater percentage of raw material purchases are paid for with credit.

   f. More finished goods are produced for inventory instead of for order.

5. **Calculating Cash Collections** [LO3] The Morning Jolt Coffee Company has projected the following quarterly sales amounts for the coming year:

	Q1	Q2	Q3	Q4
Sales	$820	$850	$930	$1,010

   a. Accounts receivable at the beginning of the year are $345. The company has a 45-day collection period. Calculate cash collections in each of the four quarters by completing the following:

	Q1	Q2	Q3	Q4
Beginning receivables				
Sales				
Cash collections				
Ending receivables				

10. Calculating Cash Collections [LO3] The following is the sales budget for Harp, Inc., for the first quarter of 2015:

	January	February	March
Sales budget	$216,000	$241,000	$257,000

Credit sales are collected as follows:

65 percent in the month of the sale
20 percent in the month after the sale
15 percent in the second month after the sale

The accounts receivable balance at the end of the previous quarter was $93,000 ($62,000 of which was uncollected December sales).

a. Compute the sales for November.
b. Compute the sales for December.
c. Compute the cash collections from sales for each month from January through March.

11. Calculating the Cash Budget [LO3] Here are some important figures from the budget of Nashville Nougats, Inc., for the second quarter of 2015:

	April	May	June
Credit sales	$374,400	$349,500	$420,500
Credit purchases	148,900	169,300	200,300
Cash disbursements			
Wages, taxes, and expenses	54,340	70,300	75,170
Interest	12,580	12,580	12,580
Equipment purchases	88,800	135,000	0

The company predicts that 5 percent of its credit sales will never be collected, 35 percent of its sales will be collected in the month of the sale, and the remaining 60 percent will be collected in the following month. Credit purchases will be paid in the month following the purchase.

In March 2015, credit sales were $235,000 and credit purchases were $161,300. Using this information, complete the following cash budget:

	April	May	June
Beginning cash balance	$135,000		
Cash receipts			
Cash collections from credit sales			
Total cash available			
Cash disbursements			
Purchases			
Wages, taxes, and expenses			
Interest			
Equipment purchases			
Total cash disbursements			
Ending cash balance			

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c. If you don't take the discount, how much interest are you paying implicitly? How many days' credit are you receiving?

2. **Size of Accounts Receivable** [LO1] The Red Zeppelin Corporation has annual sales of $31 million. The average collection period is 27 days. What is the average investment in accounts receivable as shown on the balance sheet? Assume 365 days per year.
3. **ACP and Accounts Receivable** [LO1] Kyoto Joe, Inc., sells earnings forecasts for Japanese securities. Its credit terms are 2/10, net 30. Based on experience, 75percent of all customers will take the discount.

   a. What is the average collection period for Kyoto Joe?

   b. If Kyoto Joe sells 1,450 forecasts every month at a price of $1,620 each, what is its average balance sheet amount in accounts receivable?
4. **Size of Accounts Receivable** [LO1] Skye Flyer, Inc., has weekly credit sales of $23,500, and the average collection period is 34 days. What is the average accounts receivable figure?
5. **Terms of Sale** [LO1] A firm offers terms of 1/10, net 30. What effective annual interest rate does the firm earn when a customer does not take the discount? Without doing any calculations, explain what will happen to this effective rate if:

   a. The discount is changed to 2 percent.

   b. The credit period is increased to 45 days.

   c. The discount period is increased to 15 days.
6. **ACP and Receivables Turnover** [LO1] Evil Pop, Inc., has an average collection period of 29 days. Its average daily investment in receivables is $43,900. What are annual credit sales? What is the receivables turnover? Assume 365 days per year.
7. **Size of Accounts Receivable** [LO1] Essence of Skunk Fragrances, Ltd., sells 8,600 units of its perfume collection each year at a price per unit of $410. All sales are on credit with terms of 1/10, net 40. The discount is taken by 65 percent of the customers. What is the amount of the company's accounts receivable? In reaction to sales by its main competitor, Sewage Spray, Essence of Skunk is considering a change in its credit policy to terms of 2/10, net 30 to preserve its market share. How will this change in policy affect accounts receivable?
8. **Size of Accounts Receivable** [LO1] The Arizona Bay Corporation sells on credit terms of net 30. Its accounts are, on average, four days past due. If annual credit sales are $9.75 million, what is the company's balance sheet amount in accounts receivable?
9. **Evaluating Credit Policy** [LO2] Air Spares is a wholesaler that stocks engine components and test equipment for the commercial aircraft industry. A new customer has placed an order for eight high-bypass turbine engines, which increase fuel economy. The variable cost is $1.6 million per unit, and the credit price is $1.725 million each. Credit is extended for one period, and based on historical experience, payment for about 1 out of every 200 such orders is never collected. The required return is 1.8 percent per period.

   a. Assuming that this is a one-time order, should it be filled? The customer will not buy if credit is not extended.

   b. What is the break-even probability of default in part (a)?

10. Credit Policy Evaluation [LO2] Seether, Inc., is considering a change in its cash-only sales policy. The new terms of sale would be net one month. Based on the following information, determine if the company should proceed or not. Describe the buildup of receivables in this case. The required return is .95 percent per month.

	Current Policy	New Policy
Price per unit	$ 630	$ 630
Cost per unit	$ 495	$ 495
Unit sales per month	1,240	1,310

11. EOQ [LO4] Louise Manufacturing uses 2,800 switch assemblies per week and then reorders another 2,800. If the relevant carrying cost per switch assembly is $6.20, and the fixed order cost is $1,200, is the company's inventory policy optimal? Why or why not?

12. EOQ [LO4] The Trektronics store begins each week with 450 phasers in stock. This stock is depleted each week and reordered. If the carrying cost per phaser is $41 per year and the fixed order cost is $130, what is the total carrying cost? What is the restocking cost? Should Trektronics increase or decrease its order size? Describe an optimal inventory policy for Trektronics in terms of order size and order frequency.

INTERMEDIATE

(Questions 13–16)

13. EOQ Derivation [LO4] Prove that when carrying costs and restocking costs are as described in the chapter, the EOQ must occur at the point where the carrying costs and restocking costs are equal.

14. Credit Policy Evaluation [LO2] The Snedecker Corporation is considering a change in its cash-only policy. The new terms would be net one period. Based on the following information, determine if the company should proceed or not. Therequired return is 2.5 percent per period.

	Current Policy	New Policy
Price per unit	$ 73	$ 75
Cost per unit	$ 38	$ 38
Unit sales per month	3,280	3,390

15. Credit Policy Evaluation [LO2] Jungle, Inc., currently has an all-cash credit policy. It is considering making a change in the credit policy by going to terms of net 30 days. Based on the following information, what do you recommend? The required return is .95 percent per month.

	Current Policy	New Policy
Price per unit	$ 125	$ 127
Cost per unit	$ 96	$ 98
Unit sales per month	1,320	1,350

16. Credit Policy [LO2] The Silver Spokes Bicycle Shop has decided to offer credit to its customers during the spring selling season. Sales are expected to be 200bicycles. The average cost to the shop of a bicycle is $750. The owner knows that only 96 percent of the customers will be able

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e. Which is worth more, a Mexican peso or a Chilean peso?

f. How many Mexican pesos can you get for a euro? What do you call this rate?

g. Per unit, what is the most valuable currency of those listed? The least valuable?

2. Using the Cross-Rate [LO1] Use the information in Figure 21.1 to answer the following questions:

a. Which would you rather have, \$100 or £100? Why?

b. Which would you rather have, 100 Swiss francs (SF) or £100? Why?

c. What is the cross-rate for Swiss francs in terms of British pounds? For British pounds in terms of Swiss francs?

3. Forward Exchange Rates [LO1] Use the information in Figure 21.1 to answer the following questions:

a. What is the six-month forward rate for the Japanese yen in yen per U.S. dollar? Is the yen selling at a premium or a discount? Explain.

b. What is the three-month forward rate for Australian dollars in U.S. dollars per Australian dollar? Is the dollar selling at a premium or a discount? Explain.

c. What do you think will happen to the value of the dollar relative to the yen and the Australian dollar, based on the information in the figure? Explain.

4. Using Spot and Forward Exchange Rates [LO1] Suppose the spot exchange rate for the Canadian dollar is Can\$1.09 and the six-month forward rate is Can\$1.11.

a. Which is worth more, a U.S. dollar or a Canadian dollar?

b. Assuming absolute PPP holds, what is the cost in the United States of an Elkhead beer if the price in Canada is Can\$2.50? Why might the beer actually sell at a different price in the United States?

c. Is the U.S. dollar selling at a premium or a discount relative to the Canadian dollar?

d. Which currency is expected to appreciate in value?

e. Which country do you think has higher interest rates—the United States or Canada? Explain.

5. Cross-Rates and Arbitrage [LO1] Suppose the Japanese yen exchange rate is ¥104 = \$1, and the British pound exchange rate is £1 = \$1.69.

a. What is the cross-rate in terms of yen per pound?

b. Suppose the cross-rate is ¥179 = £1. Is there an arbitrage opportunity here? If there is, explain how to take advantage of the mispricing and the potential arbitrage profit. What is your arbitrage profit per dollar used?

6. Interest Rate Parity [LO2] Use Figure 21.1 to answer the following questions: Suppose interest rate parity holds, and the current six-month risk-free rate in the United States is 1.8 percent. What must the six-month risk-free rate be in Great Britain? In Japan? In Switzerland?

7. Interest Rates and Arbitrage [LO2] The treasurer of a major U.S. firm has \$30 million to invest for three months. The interest rate in the United States is .31 percent per month. The interest rate in Great Britain is .34 percent per month. The spot exchange rate is £.573, and the three-month forward rate is £.575. Ignoring transaction costs, in which country would the treasurer want to invest the company's funds? Why?

8. **Inflation and Exchange Rates** [LO2] Suppose the current exchange rate for the Polish zloty is Z 3.03. The expected exchange rate in three years is Z 3.06. What is the difference in the annual inflation rates for the United States and Poland over this period? Assume that the anticipated rate is constant for both countries. What relationship are you relying on in answering?

CONCEPTS REVIEW AND CRITICAL THINKING QUESTIONS

1. **Merger Types** [LO1] In 2014, Japanese liquor company Suntory Holdings acquired U.S. bourbon maker Beam, Inc., for $14 billion. Is this a horizontal or vertical acquisition? How might Beam's nationality affect the decision by Suntory?
2. **Merger Terms** [LO1] Define each of the following terms:
   a. Greenmail.
   b. White knight.
   c. Golden parachute.
   d. Crown jewels.
   e. Shark repellent.
   f. Corporate raider.
   g. Poison pill.
   h. Tender offer.
   i. Leveraged buyout or LBO.
3. **Merger Rationale** [LO1] Explain why diversification per se is probably not a good reason for merger.
4. **Corporate Split** [LO3] In 2014, activist investor Nelson Pelz was pressuring PepsiCo to split up the company. Pelz felt that PepsiCo should split up the soft drink division, which includes Pepsi, Mountain Dew, and Tropicana, and the snack food division, with brands Fritos, Lay's, and Doritos. Why might investors prefer that a company split into multiple companies? Is there a possibility of reverse synergy?
5. **Poison Pills** [LO1] Are poison pills good or bad for stockholders? How do you think acquiring firms are able to get around poison pills?
6. **Merger and Taxes** [LO2] Describe the advantages and disadvantages of a taxable merger as opposed to a tax-free exchange. What is the basic determinant of tax status in a merger? Would an LBO be taxable or nontaxable? Explain.
7. **Economies of Scale** [LO3] What does it mean to say that a proposed merger will take advantage of available economies of scale? Suppose Eastern Power Co. and Western Power Co. are located in different time zones. Both of them operate at 60 percent of capacity except for peak periods, when they operate at 100 percent of capacity. The peak periods begin at 9:00 a.m. and 5:00 p.m. local time and last about 45 minutes. Explain why a merger between Eastern and Western might make sense.
8. **Hostile Takeovers** [LO1] What types of actions might the management of a firm take to fight a hostile acquisition bid from an unwanted suitor? How do the target firm shareholders benefit from the defensive tactics of their management team? How are the target firm shareholders harmed by such actions? Explain.
9. **Merger Offers** [LO1] Suppose a company in which you own stock has attracted two takeover offers. Would it ever make sense for your company's management to favor the lower offer? Does the form of payment affect your answer at all?
10. **Merger Profit** [LO2] Acquiring firm stockholders seem to benefit very little from takeovers. Why is this finding a puzzle? What are some of the reasons offered for it?

QUESTIONS AND PROBLEMS

connect FINANCE

BASIC

(Questions 1–8)

1. **Calculating Synergy** [LO3] Pearl, Inc., has offered $357 million cash for all of the common stock in Jam Corporation. Based on recent market information, Jam is worth $319 million as an independent operation. If the merger makes economic

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sense for Pearl, what is the minimum estimated value of the synergistic benefits from the merger?

2. **Balance Sheets for Mergers** [LO2] Consider the following premerger information about Firm X and Firm Y:

	Firm X	Firm Y
Total earnings	$87,000	$11,000
Shares outstanding	35,000	12,000
Per-share values:		
Market	$ 57	$ 19
Book	$ 7	$ 3

Assume that Firm X acquires Firm Y by paying cash for all the shares outstanding at a merger premium of $6 per share. Assuming that neither firm has any debt before or after the merger, construct the postmerger balance sheet for Firm X assuming the use of purchase accounting.

3. **Balance Sheets for Mergers** [LO2] Assume that the following balance sheets are stated at book value. Suppose that Meat Co. purchases Loaf, Inc.

Meat Co.			
Current assets	$15,000	Current liabilities	$ 5,400
Net fixed assets	39,000	Long-term debt	10,100
		Equity	38,500
Total	$54,000	Total	$54,000

Loaf, Inc.			
Current assets	$ 3,600	Current liabilities	$ 1,400
Net fixed assets	6,700	Long-term debt	2,100
		Equity	6,800
Total	$ 10,300	Total	$10,300

The fair market value of Loaf's fixed assets is $9,500 versus the $6,700 book value shown. Meat pays $17,300 for Loaf and raises the needed funds through an issue of long-term debt. Construct the postmerger balance sheet under the purchase accounting method.

4. **Balance Sheets for Mergers** [LO2] Silver Enterprises has acquired All Gold Mining in a merger transaction. Construct the balance sheet for the new corporation if the merger is treated as a purchase of interests for accounting purposes. The following balance sheets represent the premerger book values for both firms:

Silver Enterprises			
Current assets	$ 5,300	Current liabilities	$ 3,100
Other assets	1,500	Long-term debt	7,800
Net fixed assets	17,900	Equity	13,800
Total	$24,700	Total	$24,700