

Advanced M&A and Merger Models – Quiz Questions

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Transaction Assumptions and Sources & Uses

1. Which of the following statements are TRUE regarding the calculation of “Funds Required” in an M&A model when determining how much the buyer has to pay?
 - a. The formula for Funds Required includes the Equity Purchase Price
 - b. The formula for Funds Required includes Refinanced Debt
 - c. The formula for Funds Required includes Capitalized Financing Fees
 - d. The formula for Funds Required includes Transaction Fees
 - e. The formula for Funds Required includes Assumed Debt

2. Which of the following statements regarding Transaction Assumptions are FALSE?
 - a. Financing fees are capitalized and then amortized over the maturity period of the debt
 - b. Advisory fees are charged as a percentage of deal value and then capitalized and amortized over the time period the buyer expects to hold the seller
 - c. Legal and Miscellaneous fees are determined as a percentage of deal value and expensed immediately
 - d. Existing debt on the seller’s Balance Sheet may be either refinanced or kept in place – and the treatment in the Transaction Assumptions section differs based on that choice

EXHIBIT 1.0 [All \$ figures in Millions, except per share data]

Buyer Assumptions - Acquirer Co.		Seller Assumptions - Target Co.	
Name:	Acquirer Co.	Name:	Target Co.
Ticker:	XYZ	Ticker:	ABC
Fiscal Year Ends:	31-Dec	Fiscal Year Ends:	31-Dec
Share Price:	\$ 30.50	Share Price:	\$ 12.00
Fully Diluted Shares Outstanding:	10,000.0	Fully Diluted Shares Outstanding:	2,000.0
Market Capitalization:	\$ 305,000	Market Capitalization:	\$ 24,000
Cash & Cash Equivalents:	5,000	Cash & Cash Equivalents:	2,000
Equity Investments:	-	Equity Investments:	-
Debt:	-	Debt:	-
Noncontrolling Interest (Minority Interest):	-	Noncontrolling Interest (Minority Interest):	-
Preferred Stock:	-	Preferred Stock:	-
Enterprise Value:	\$ 300,000	Enterprise Value:	\$ 22,000
Tax Rate:	30.0%	Book Value of Equity:	9,500
Minimum Cash Balance:	\$ 1,000	Existing Goodwill Balance:	2,500
Interest Rate on Cash:	3.5%		

Transaction Structure & Assumptions - Scenarios						
				%:	Amount:	Period:
Select Scenario:	1			Financing Fees:	1.0%	\$ - 5
Transaction Type:	1			Advisory Fees:	0.1%	\$ 33.0 N/A
(1 = Stock, 0 = Asset or 338(h)(10))						
	Selected Scenario			Legal & Misc. Fees:		\$ 3.5 N/A
Scenario:	1	1	2	3	4	5
Per-Share Purchase Price:	\$ 16.50	\$ 16.50	\$ 16.50	\$ 16.50	\$ 17.00	\$ 17.50
Equity Purchase Price:	\$ 33,000	\$ 33,000	\$ 33,000	\$ 33,000	\$ 34,000	\$ 35,000
Implied Premium:	37.5%	37.5%	37.5%	37.5%	41.7%	45.8%
Refinanced Debt:	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Financing Fees:	\$ -	\$ -	\$ 110	\$ 166	\$ 171	\$ -
Transaction Fees:	\$ 37	\$ 37	\$ 37	\$ 37	\$ 38	\$ 39
Funds Required:	\$ 33,000	\$ 33,000	\$ 33,110	\$ 33,166	\$ 34,171	\$ 35,000
% Cash:	50.0%	50.0%	33.3%	- %	50.0%	50.0%
% Stock:	50.0%	50.0%	33.3%	50.0%	- %	50.0%
% Debt:	- %	- %	33.3%	50.0%	50.0%	- %
% Term Loan A Debt:	50.0%	50.0%	50.0%	30.0%	50.0%	50.0%
Cash Used:						
Stock Used:						
Common Shares Issued:						
Debt, Term Loan A:	\$ -	\$ -	\$ 5,518	\$ 4,975	\$ 8,543	\$ -
Debt, High-Yield:	\$ -	\$ -	\$ 5,518	\$ 11,608	\$ 8,543	\$ -
Foregone Cash Interest Rate:	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%

EXHIBIT 1.1 [All \$ figures in Millions, except per share data]

Purchase Price Allocation & Pro-Forma Balance Sheet Adjustments				
Goodwill Calculation:			Fixed Asset Write-Up:	
Equity Purchase Price:	\$	33,000	Book Value of PP&E	1,750
Less: Seller Book Value:		(9,500)	PP&E Write-Up %:	10.0%
Plus: Write-Off of Existing Goodwill:		2,500	PP&E Write-Up Amount:	
Total Allocable Purchase Premium:	\$	26,000	Depreciation Period (Years) - Book:	8 years
			Depreciation Period (Years) - Tax:	6 years
Less: Write-Up of PP&E:			Yearly Depreciation Expense - Book:	\$ -
Less: Write-Up of Intangibles:			Yearly Depreciation Expense - Tax:	\$ -
Less: Write-Off of Existing DTL:		(100)		
Plus: Write-Down of Existing DTA:		50	Intangible Asset Write-Up:	
Plus: New Deferred Tax Liability:			Excess Purchase Price to Allocate:	
Total Goodwill Created:			% Allocated to Intangibles:	20.0%
			Intangibles Write-Up Amount:	\$ -
Goodwill Period (Years) - Book:		N/A	Amortization Period (Years) - Book:	5 years
Goodwill Period (Years) - Tax:		15	Amortization Period (Years) - Tax:	15 years
Yearly Goodwill Expense - Book:	\$	-	Yearly Amortization Expense - Book:	
Yearly Goodwill Expense - Tax:	\$	-	Yearly Amortization Expense - Tax:	
Deferred Revenue Write-Down:			New Deferred Tax Liability:	\$ -
Seller Deferred Revenue:	\$	750		
% Fair Value:		50.0%		
Deferred Revenue Write-Down:	\$	375		
Write-Down Period (Years):		1		
Yearly Deferred Revenue Expense:	\$	375		

[THE FOLLOWING 5 QUESTIONS RELATE TO EXHIBITS 1.0 & 1.1.]

[Note: Certain missing financial data are highlighted yellow in the exhibits above.]

3. In Exhibit 1.0 above in Scenario 1, how many common shares would the buyer need to issue if it offered \$16.50 per share for the target and financed the deal with 50% cash and 50% stock? Assume that this per share purchase price does **NOT** result in additional diluted shares for the seller.
 - a. Buyer Common Shares Issued = 361.86M
 - b. Buyer Common Shares Issued = 543.70M
 - c. Buyer Common Shares Issued = 540.98M
 - d. Buyer Common Shares Issued = 573.77M

4. **What is the value of the New Deferred Tax Liability, as shown in the purchase price allocation schedule in Exhibit 1.1? Once again, we are in Scenario 1. Assume that this is a STOCK PURCHASE, as shown in Exhibit 1.0 above.**
- a. New Deferred Tax Liability = \$1,413M
 - b. New Deferred Tax Liability = \$1,513M
 - c. New Deferred Tax Liability = \$1,613M
 - d. New Deferred Tax Liability = \$1,713M
5. **What is the Total Goodwill Created for this hypothetical transaction?**
- a. Total Goodwill Created = \$20,575M
 - b. Total Goodwill Created = \$21,188M
 - c. Total Goodwill Created = \$22,000M
 - d. Total Goodwill Created = \$22,188M
6. **Now assume that this transaction is an Asset Purchase as opposed to a Stock Purchase. What is the Total Goodwill Created for this transaction?**
- a. Total Goodwill Created = \$20,575M
 - b. Total Goodwill Created = \$21,188M
 - c. Total Goodwill Created = \$22,000M
 - d. Total Goodwill Created = \$22,188M

7. In Exhibit 1.1, what is the Yearly Depreciation Expense for both Book AND Tax purposes? This time, assume that the transaction type is a 338(h)(10) Election instead of a Stock Purchase.
- a. Yearly Depreciation Expense – Book = \$22M; Yearly Depreciation Expense – Tax = \$0
 - b. Yearly Depreciation Expense – Book = \$22M; Yearly Depreciation Expense – Tax = \$29M
 - c. Yearly Depreciation Expense – Book = \$0; Yearly Depreciation Expense – Tax = \$0
 - d. Yearly Depreciation Expense – Book = \$0; Yearly Depreciation Expense – Tax = \$29M

Purchase Price Allocation & Balance Sheet Combination

EXHIBIT 2.0 Transaction Assumptions & Purchase Price Allocation

Transaction Assumptions				
Buyer Name:		Acquirer Co.	Premium to Seller's Share Price:	30.0%
Seller Name:		Target Co.	Per Share Purchase Price:	\$ 31.81
			Equity Purchase Price:	\$ 10,640
% Cash:		33.0%	Cash Used:	\$ 3,511
% Stock:		33.0%	Stock Issued - Dollar Value:	3,511
% Debt:		34.0%	Debt Issued:	3,618
Purchase Price Allocation & Pro-Forma Balance Sheet Adjustments				
Goodwill Calculation:			Fixed Asset Write-Up:	
Equity Purchase Price:		\$ 10,640	PP&E Write-Up %:	15.0%
Less: Seller Book Value:		(4,904)	PP&E Write-Up Amount:	121
Plus: Write-Off of Existing Goodwill:		1,423	Depreciation Period (Years) - Book:	8
Total Allocable Purchase Premium:		\$ 7,159	Yearly Depreciation Expense - Book:	15
Less: Write-Up of PP&E:		(121)	Intangible Asset Write-Up:	
Less: Write-Up of Intangibles:		(1,790)	Excess Purchase Price to Allocate:	7,159
Less: Write-Off of Existing DTL:		(79)	% Allocated to Intangibles:	25.0%
Plus: Write-Off of Existing DTA:		-	Intangibles Write-Up Amount:	1,790
Plus: New Deferred Tax Liability:		573	Amortization Period (Years) - Book:	5
Total Goodwill Created:		\$ 5,743	Yearly Amortization Expense - Book:	358
			New Deferred Tax Liability:	\$ 573

EXHIBIT 2.1 Pro-Forma Balance Sheet Combination

Combined Balance Sheet:							
	Pre-Transaction		Adjustments			Close Date	
	Buyer	Seller	Debit	Credit			
Assets:							
Current Assets:							
Cash & Cash-Equivalents:	\$ 39,118	\$ 3,026					
Other Current Assets:	7,324	3,287					
Total Current Assets:	46,442	6,313					
Long-Term Assets:							
PP&E, Net:	9,003	806					
Goodwill:	6,677	1,423					
Other Intangible Assets:	-	-					
Deferred Tax Assets:	-	-					
Other Long-Term Assets:	2,739	1,014					
Total Long-Term Assets:	18,419	3,243					
Total Assets:	64,861	9,556					
Liabilities & Equity:							
Current Liabilities:							
Short-Term Debt:	1,217	98					
Other Current Liabilities:	6,581	4,004					
Total Current Liabilities:	7,798	4,102					
Long-Term Liabilities:							
Long-Term Debt:	2,985	-					
Deferred Income Tax Liability:	-	79					
Other Long-Term Liabilities:	2,087	471					
Total Long-Term Liabilities:	5,072	550					
Total Liabilities:	12,870	4,652					
Equity:	51,991	4,904					
Total Liabilities & Equity:	\$ 64,861	\$ 9,556					

[THE FOLLOWING 4 QUESTIONS RELATE TO EXHIBIT 2.0 AND EXHIBIT 2.1.]

8. In Exhibit 2.1, what adjustments (i.e. Debit or Credit) would be made to Current Assets, and what would be the combined pro-forma Total Current Assets balance as of the close date? Ignore transaction fees and assume that **ONLY** the items listed in the Purchase Price Allocation schedule in Exhibit 2.0 above factor in.
- Credit adjustment of \$3,511 under Cash & Cash-Equivalents and Total Current Asset balance of \$49,244 as of Close Date
 - Debit adjustment of \$3,511 under Cash & Cash-Equivalents and Total Current Asset balance of \$56,266 as of Close Date
 - Credit adjustment of \$3,511 under Other Current Assets and Total Current Asset balance of \$49,244 as of Close Date
 - Debit adjustment of \$3,511 under Other Current Assets and Total Current Asset balance of \$56,266 as of Close Date
9. Which of the following Balance Sheet adjustments for Total Assets are **INCORRECT**?
- PP&E Debit adjustment of \$121 from the newly written-up asset value
 - PP&E Credit adjustment of \$121 from the newly written-up asset value
 - Goodwill Debit adjustment of \$1,423 from the seller's written-off Goodwill
 - Goodwill Credit adjustment of \$5,743 from the newly created Goodwill
 - Other Intangible Asset Debit adjustment of \$1,790 from the Excess Purchase Price Allocable to Intangibles

10. In Exhibit 2.1, which of the following adjustments would you make to Long-Term Debt and Deferred Tax Liabilities, and what would be the combined Total Liabilities balance as of the close date?
- a. Credit adjustment of \$3,618 under Long-Term Debt and Total Liabilities balance of \$9,734 as of the Close Date
 - b. Debit adjustment of \$3,618 under Long-Term Debt and Total Liabilities balance of \$2,499 as of the Close Date
 - c. Debit adjustment of \$79 and credit adjustment of \$573 under Deferred Tax Liabilities and Total Liabilities balance of \$9,734 as of the Close Date
 - d. Credit adjustment of \$79 and debit adjustment of \$573 under Deferred Tax Liabilities and Total Liabilities balance of \$8,746 as of the Close Date
11. Let's continue with this scenario, but now pretend that the seller had EXISTING Long-Term Debt. In the transaction, this existing Long-Term Debt gets refinanced (paid off). How would this refinanced debt affect the final combined balances for the Long-Term Debt and the Deferred Tax Liability? Assume that you're comparing these final balances to their final values WITHOUT this refinanced debt.
- a. It would not affect the DTL, but it would decrease the Long-Term Debt balance
 - b. It would increase the DTL since the Equity Purchase Price is now higher, and it would also decrease the Long-Term Debt balance
 - c. It would not affect the DTL, but it could decrease OR keep the Long-Term Debt balance the same depending on how the buyer pays off the debt
 - d. It would increase the DTL since the Equity Purchase Price is now higher, but the Long-Term Debt balance would remain the same

Combining the Income Statements

12. Which of the following statements are **TRUE** regarding combining the Income Statements of the buyer and seller in a merger model?
- a. After adding buyer's and seller's existing revenues together, a new line item called revenue synergies may also be created
 - b. The Deferred Revenue Write-Down does not show up on the Income Statement at all, since it appears on the Balance Sheet right at the time the transaction closes
 - c. Foregone interest on cash is another modification to the combined Income Statement, and it represents the "cost" to the buyer when it uses cash to complete the acquisition
 - d. You must always note whether or not new expenses (such as newly created D&A) are truly cash tax-deductible or are only book tax-deductible on the combined Income Statement
 - e. The new depreciation expense and new amortization expense are acquisition effects due to the asset write-ups that come as a result of Purchase Price Allocation
 - f. Revenue synergies and expense synergies are the only recognized acquisition effects when combining the two Income Statements

13. You're completing the Income Statement combination in a merger model, and you model the Foregone Interest on Cash as Cash Used In Deal * Average of Historical Cash Interest Rates in Years 1, 2, and 3. What are the flaws with using this approach to calculate the Foregone Interest on Cash?

- a. There is no flaw – this is the way that you always model the Foregone Interest on Cash in a merger model
- b. You must also take into account the ADDITIONAL lost interest in future years above and beyond this number as a result of having a lower cash balance... due to this reduced interest income in the first place
- c. You also need to take into account any cash the company raises from stock that was issued to complete the deal
- d. Historical interest rates may be significantly different from interest rates in future years
- e. It's incorrect to use the historical average of the past 3 years' interest rates here, since future interest rates will be most closely linked to those in the most recent year

14. **You're creating the combined Income Statement for the buyer and seller in an advanced merger model. To determine the Depreciation from the PP&E Write-Up to record on the Income Statement in each year, you use the formula: $\text{New Depreciation} = \text{PP\&E Write-Up Amount} / \text{Depreciation Years (Book)}$. What is the PROBLEM with using this formula on the Income Statement?**
- a. For PP&E Write-Ups, you should use accelerated Depreciation rather than assuming that it's straight-lined
 - b. Since Depreciation is tax-deductible, you should use Depreciation Years (Tax) here rather than the Book Depreciation period
 - c. You need to check to ensure that the Write-Up is not fully depreciated prior to the final period shown on the Income Statement
 - d. There's no problem – you always assume straight-line Depreciation for this type of scenario and divide by the weighted average useful life of the assets
15. **You're combining the Income Statements of the buyer and seller in a more advanced merger model, and you include New Depreciation from the PP&E Write-Up as well as New Amortization from the Intangibles Write-Up in the analysis. Originally you modeled the transaction as a Stock Purchase, but now you change it to a 338(h)(10) Election. How does the BOOK version of the combined Income Statement change as a result?**
- a. It would not change at all – you might make different adjustments elsewhere in the model, however
 - b. These write-ups are not allowed in a 338(h)(10) Election, so D&A from the write-ups would no longer exist on the combined Income Statement
 - c. There would be no changes in a 338(h)(10) Election, but the Write-Ups would no longer be allowed if this transaction were structured as an Asset Purchase instead, so the new D&A would disappear in that case
 - d. You assume different useful lives for the assets for Book vs. Tax purposes, so the new D&A would still exist on the Income Statement, but the numbers themselves might be different

16. Which of the following statements are **FALSE** regarding the process of combining of the buyer and seller's Income Statements in a merger model?

- a. All buyer and seller line items are added together, and then you apply the weighted average effective tax rate between the buyer and seller to the Combined Pre-Tax Income to determine the Combined Net Income
- b. When calculating Pro Forma EPS, both the buyer and seller's shares outstanding are added together, and then you add in the additional shares the buyer issued to finance the deal
- c. The "cost" portion of a seller's Deferred Revenue balance is written down on the Income Statement over a period of time after transaction close, because accounting rules only permit the "profit" portion to be recognized
- d. Most of the adjustments you make on the combined Income Statement will INCREASE the Combined Pre-Tax Income and therefore also INCREASE the Combined Net Income

Revenue, Expense, and CapEx Synergies

17. Below is a screenshot from the calculation you are making for revenue synergies in a potential acquisition:

EXHIBIT 3.0

ACME Co. Revenue Synergies			
(\$ in Millions Except Revenue Per Search and Revenue Per Pageview in \$ as Stated)			
Revenue Synergies from Improved Monetization (Seller):			
	Combined Years		
	Year 1	Year 2	Year 3
Search Advertising:	\$ 2,000	\$ 2,250	\$ 2,500
Display Advertising:	1,000	1,250	1,500
Revenue Per Search (RPS) - ACME Co.:	\$0.011	\$0.012	\$0.013
% Increase Due to Buyer:	12.0%	12.0%	12.0%
New Revenue Per Search (RPS):	\$0.012	\$0.013	\$0.015
Total Searches Per Year:	100,000	150,000	175,000
Search Revenue Synergies:			
Revenue Per Pageview - ACME Co.:	\$0.0020	\$0.0021	\$0.0022
% Increase Due to Buyer:	7.0%	7.0%	7.0%
New Revenue Per Pageview:	\$0.0021	\$0.0022	\$0.0024
Total Pageviews Per Year:	1,500,000	1,750,000	1,950,000
Display Revenue Synergies:			
Total Revenue Synergies:			
Seller - Existing Gross Margin:	75.5%	75.3%	75.0%
Expenses Associated with Revenue Synergies:			

Which of the following answer choices represents the **TOTAL** revenue synergies across both business segments for Year 1?

- Total revenue synergies in Year 1 = \$132.0 million
- Total revenue synergies in Year 1 = \$210.0 million
- Total revenue synergies in Year 1 = \$342.0 million
- Total revenue synergies in Year 1 = \$258.2 million

18. For which of the following reasons must we factor in the seller's existing gross margin in the revenue synergy calculations in Exhibit 3.0 above?
- a. You always need this figure to calculate expense synergies for the transaction
 - b. So that we can calculate the net amount of pre-tax profit from revenue synergies that will be added to the pro-forma combined Income Statement
 - c. To reflect the expenses associated with incremental revenues – it always costs *something* to sell additional products or services
 - d. To reflect the fact that 100% of the gross revenue synergies will not flow through dollar-for-dollar to the combined Operating Income and Pre-Tax Income
19. Although we're factoring in the seller's Cost of Goods Sold on these revenue synergies by using its Gross Margin %, we're ignoring Operating Expenses that might be associated with these revenue synergies. Is this correct?
- a. Not entirely, but it's not necessarily "wrong" – there may be additional OpEx as well, but often it's far less than the seller's real OpEx as a % of revenue
 - b. No – inevitably there will be additional Operating Expenses, so you should actually be using the seller's Operating Margin rather than its Gross Margin
 - c. Yes – revenue synergies might result in additional COGS, but you won't have to hire any additional employees or spend more on fixed costs
 - d. It depends on whether we're calculating revenue synergies for the seller or the buyer

20. Which of the following statements are TRUE regarding expense synergies in an M&A context?

- a. Revenue synergies are taken more seriously than expense synergies since revenue synergies are much easier to quantify
- b. A “Reduction in Force” is a standard expense synergy in which the buyer assumes that a certain percentage of seller’s employees are laid off post-transaction
- c. Building consolidation constitutes another expense synergy, in which the buyer and seller can reduce their rental expense or mortgage expense by selling or ending the lease on redundant buildings
- d. You must assume a margin with expense synergies, similar to how you assume a margin on revenue synergies – because there may be expenses associated with implementing these expense synergies

21. Which of the following statements are **TRUE** regarding CapEx Synergies (Capital Expenditures synergies) – in other words, assuming lower spending on PP&E post-transaction close?
- a. Any reduction in Capital Expenditures post-transaction close would be reflected on the Combined Cash Flow Statement in future years
 - b. This reduction in CapEx spending would also result in an immediate reduction to Depreciation on the Combined Income Statement, resulting in a higher EPS from Year 1 onward
 - c. This reduction in CapEx spending would result in lower Depreciation on the Combined Income Statement, resulting in a higher EPS, but only from Year 2 onward (if you assume CapEx is reduced immediately in Year 1)
 - d. A large reduction in Capital Expenditures would most likely boost revenue, since the company's expense profile is now lower and it can afford to re-invest more of its profits into growing the business
 - e. One justification for Capital Expenditure synergies is that the buyer and seller may be able to consolidate some of their PP&E, resulting in reduced maintenance CapEx going forward

Book vs. Cash Taxes and Section 382 NOLs in Merger Models

EXHIBIT 4.0 – Transaction Assumptions

Transaction Structure & Assumptions - Scenarios									
						%:	Amount:	Period:	
Select Scenario:		5				Financing Fees:	1.0%	\$ -	5
Transaction Type:		1				Advisory Fees:	0.1%	\$ 35.0	N/A
(1 = Stock, 0 = Asset or 338(h)(10))						Legal & Misc. Fees:		\$ 3.5	N/A
		Selected							
		Scenario							
Scenario:		5	1	2	3	4	5		
Per-Share Purchase Price:		\$ 17.50	\$ 16.50	\$ 16.50	\$ 16.50	\$ 17.00	\$ 17.50		
Equity Purchase Price:		\$ 35,000	\$ 33,000	\$ 33,000	\$ 33,000	\$ 34,000	\$ 35,000		
Implied Premium:		45.8%	37.5%	37.5%	37.5%	41.7%	45.8%		
Refinanced Debt:		\$ -	\$ -	\$ -	\$ -	\$ -	\$ -		
Financing Fees:		\$ -	\$ -	\$ 110	\$ 166	\$ 171	\$ -		
Transaction Fees:		\$ 39	\$ 37	\$ 37	\$ 37	\$ 38	\$ 39		
Funds Required:		\$ 35,000	\$ 33,000	\$ 33,110	\$ 33,166	\$ 34,171	\$ 35,000		
% Cash:		50.0%	50.0%	33.3%	- %	50.0%	50.0%		
% Stock:		50.0%	50.0%	33.3%	50.0%	- %	50.0%		
% Debt:		- %	- %	33.3%	50.0%	50.0%	- %		
% Term Loan A Debt:		50.0%	50.0%	50.0%	30.0%	50.0%	50.0%		
Cash Used:		\$ 17,500	\$ 16,500	\$ 11,037	\$ -	\$ 17,085	\$ 17,500		
Stock Used:		\$ 17,500	\$ 16,500	\$ 11,037	\$ 16,583	\$ -	\$ 17,500		
Common Shares Issued:		573.77	540.98	361.86	543.70	-	573.77		
Debt, Term Loan A:		\$ -	\$ -	\$ 5,518	\$ 4,975	\$ 8,543	\$ -		
Debt, High-Yield:		\$ -	\$ -	\$ 5,518	\$ 11,608	\$ 8,543	\$ -		
Foregone Cash Interest Rate:		3.5%	3.5%	3.5%	3.5%	3.5%	3.5%		

EXHIBIT 4.1 – Purchase Price Allocation

Purchase Price Allocation & Pro-Forma Balance Sheet Adjustments				
Goodwill Calculation:			Fixed Asset Write-Up:	
Equity Purchase Price:		\$ 35,000	Book Value of PP&E	1,750
Less: Seller Book Value:		(9,500)	PP&E Write-Up %:	10.0%
Plus: Write-Off of Existing Goodwill:		2,500	PP&E Write-Up Amount:	\$ 175
Total Allocable Purchase Premium:		\$ 28,000	Depreciation Period (Years) - Book:	8 years
			Depreciation Period (Years) - Tax:	6 years
Less: Write-Up of PP&E:		\$ (175)	Yearly Depreciation Expense - Book:	\$ 22
Less: Write-Up of Intangibles:		(5,600)	Yearly Depreciation Expense - Tax:	\$ -
Less: Write-Off of Existing DTL:		(100)		
Plus: Write-Down of Existing DTA:		50	Intangible Asset Write-Up:	
Plus: New Deferred Tax Liability:		1,733	Excess Purchase Price to Allocate:	\$ 28,000
Total Goodwill Created:		\$ 23,908	% Allocated to Intangibles:	20.0%
			Intangibles Write-Up Amount:	\$ 5,600
Goodwill Period (Years) - Book:		N/A	Amortization Period (Years) - Book:	5 years
Goodwill Period (Years) - Tax:		15	Amortization Period (Years) - Tax:	15 years
Yearly Goodwill Expense - Book:		\$ -	Yearly Amortization Expense - Book:	\$ 1,120
Yearly Goodwill Expense - Tax:		\$ -	Yearly Amortization Expense - Tax:	\$ -
Deferred Revenue Write-Down:			New Deferred Tax Liability:	\$ 1,733
Seller Deferred Revenue:		\$ 750		
% Fair Value:		50.0%		
Deferred Revenue Write-Down:		\$ 375		
Write-Down Period (Years):		1		
Yearly Deferred Revenue Expense:		\$ 375		

22. In Exhibit 4.2, what is the Book Amortization of Intangibles Write-Up for Year 1 through Year 3?

- a. Year 1 = \$5,600 / Year 2 = \$1,120 / Year 3 = \$0
- b. Year 1 = \$1,120 / Year 2 = \$1,120 / Year 3 = \$1,120
- c. Year 1 = \$1,120 / Year 2 = \$1,120 / Year 3 = \$0
- d. Year 1 = \$5,600 / Year 2 = \$1,120 / Year 3 = \$1,120

23. In Exhibit 4.2, what is the Increase / (Decrease) in Deferred Tax Liability for Year 1 through Year 3?

- a. Year 1 = \$102 / Year 2 = \$128 / Year 3 = (\$343)
- b. Year 1 = (\$343) / Year 2 = \$102 / Year 3 = \$128
- c. Year 1 = \$128 / Year 2 = \$102 / Year 3 = (\$343)
- d. Year 1 = \$128 / Year 2 = \$128 / Year 3 = \$102

24. Which of the following statements are **TRUE** regarding the Book vs. Cash Tax and Section 382 NOL Schedule in a merger model?

- a. We use the MIN formula for the Cash Tax Calculation section (i.e. the yellow highlighted section in Exhibit 4.2) in Year 2 and beyond to ensure we don't "over-amortize" the write-up amount
- b. The Increase / (Decrease) in Deferred Tax Liability calculated at the bottom of Exhibit 4.2 flows into the Deferred Tax Liability on the pro-forma combined Balance Sheet in the merger model
- c. The Increase / (Decrease) in Deferred Tax Liability calculated at the bottom of Exhibit 4.2 flows directly into the pro-forma combined Cash Flow from Operations section in the Cash Flow Statement in the merger model
- d. In the case of an Asset Purchase or 338(h)(10) Election, the seller's total NOL balance would be written down to \$0 immediately following transaction close

25. Let's say that in Exhibit 4.0 above, we had selected an Asset Purchase or 338(h)(10) Election rather than a Stock Purchase. Which of the follow statements correctly describe how Exhibit 4.2 – the Book / Cash Tax Schedule itself – would be DIFFERENT under an Asset Purchase or 338(h)(10) Election?

- a. NOLs would no longer make an impact and would not reduce the Pre-NOL Taxable Income, since the seller's existing NOLs would be written down to \$0 in an Asset or 338(h)(10) deal
- b. The Pre-NOL Taxable Income will ALWAYS be lower in an Asset or 338(h)(10) deal, because D&A from Asset Write-Ups and Goodwill Amortization are both deductible for cash tax purposes
- c. In this case, the Pre-NOL Taxable Income would be far less in an Asset or 338(h)(10) deal, primarily because Goodwill can still be amortized for tax purposes
- d. It would ALWAYS be better for a company with a large NOL balance to be acquired via a Stock Purchase deal since NOLs are not written down and can be used to offset taxable income, whereas they are written down and cannot be used to offset taxable income in an Asset or 338(h)(10) deal

Accretion / Dilution and Breakeven Synergies

26. Which of the following statements are **TRUE** regarding Earnings Per Share (EPS) accretion / dilution in a merger model?
- a. All else being equal, the more cash that buyer uses to finance the deal, the more accretive to EPS the transaction will be
 - b. If the buyer's Standalone EPS exceeds the Combined EPS, then the transaction is accretive
 - c. All else being equal, amortization of new intangibles tends to make a bigger impact on EPS than depreciation from newly written-up assets
 - d. All else being equal, amortization from financing fees makes a bigger impact on EPS than interest expense on newly issued debt
 - e. In a simplified M&A model, one can directly add revenue and expense synergies to the combined pro-forma EPS to determine accretion / dilution
27. In most cases, issuing new stock is the most "expensive" way to acquire a company because the reciprocal of the buyer's P / E multiple tends to be much higher than $\text{Foregone Interest Rate on Cash} * (1 - \text{Buyer's Tax Rate})$ and $\text{Interest Rate on Debt} * (1 - \text{Buyer's Tax Rate})$. In which of the following scenarios might a stock issuance be the **LEAST** expensive way to make an acquisition and therefore result **LESS** dilution than using cash or debt?
- a. When the buyer's stock price is extremely low and it is trading at a low P / E multiple
 - b. The buyer's stock price doesn't matter – you have to look at the seller's stock price, and if that is relatively low and it has a low P / E multiple, a stock issuance might be the cheapest method
 - c. When the buyer's stock price is extremely high and it is trading at an abnormally high P / E multiple – over 100x, for example
 - d. This could never happen because cash is ALWAYS the cheapest way to acquire another company

28. Which of the following statements are TRUE regarding “breakeven synergies” in a merger model?

- a. Breakeven synergies represent the additional incremental amount of synergies needed for pro-forma combined EPS to be neutral (neither accretive nor dilutive)
- b. Breakeven synergies allow the buyer’s management team to see how much in additional expenses need to be cut at the seller so that the “math” of the deal works
- c. To calculate breakeven synergies, you take the difference between the buyer’s standalone EPS and pro-forma combined EPS and multiply it by total number of shares outstanding, and then you divide it by $(1 - \text{Seller's Tax Rate})$
- d. If the transaction were accretive to EPS from day one, you would still calculate breakeven synergies, but you would not have to “gross up” the value by dividing by $(1 - \text{Seller's Tax Rate})$

Projecting the Combined Balance Sheet and Cash Flow Statement

29. Which of the following statements are **TRUE** regarding projecting the combined Balance Sheet in a merger model?
- The Deferred Tax Liability initially increases (or gets created) when the transaction closes, due to the asset write-ups, and then in each future year it changes according to the calculations in the Book vs. Cash Tax Schedule
 - Under Long-Term Assets, to project Capitalized Financing Fees you take the prior year's balance and add to it the new amortization from Financing Fees created as a result of the acquisition effects on the Combined Income Statement
 - Under Current Liabilities, Short-Term Deferred Revenue **MUST** flow in from the Cash Flow Statement or else the 3 statements will not be linked correctly and the Balance Sheet will not balance
 - When projecting the Deferred Revenue balance, you must also take into account any Deferred Revenue write-downs in the years following the transaction close

30. Which of the following statements are TRUE regarding projecting the combined Cash Flow Statement (CFS) in a merger model?

- a. The first period in the projected CFS is the pro-forma combined historical number as of the transaction close date (i.e. you pretend as if the buyer and seller had been one single entity in the 12 months prior to transaction close)
- b. To project the Depreciation expense on the CFS, you simply combine the buyer and seller's Depreciation and add the newly created Depreciation that resulted from the PP&E write-up
- c. For the Cash Flow from Financing section of the CFS, we do NOT necessarily combine the buyer and seller's line items since the seller is no longer a standalone entity and won't issue shares, raise debt, and so on, on its own anymore
- d. In the Cash Flow from Operations section, the change in the Deferred Tax Liability is linked to a separate Book vs. Cash Tax Schedule and is NOT necessarily held constant, set to \$0, or derived from the Balance Sheet

31. Why do you normally NOT bother to project the combined Balance Sheet and combined Cash Flow Statement in the years after the transaction close in a merger model?

- a. Because doing so is not always possible – you can't create combined financial statements just based on the companies' standalone projections
- b. Because doing so doesn't necessarily give you a lot of useful information about the deal – the combined Income Statement over several years and the combined Balance Sheet immediately after transaction close are the most important parts
- c. Because you don't modify anything on the combined Cash Flow Statement or Balance Sheet – you just add together all the line items – so there's no point in going through this exercise
- d. Because it takes a lot of extra work and can be tricky to decide how to combine certain items, especially on the Cash Flow Statement – and it's not critical to the model itself

Contribution Analysis

32. You're running a contribution analysis based on a merger model. The buyer has \$900 million in revenue and the seller has \$100 million in revenue. The buyer also has \$90 million in EBITDA, and the seller has \$10 million in EBITDA. Therefore, the buyer should own exactly 90% of the combined company after the transaction closes, and you can calculate an appropriate offer price for the seller based on that.
- True
 - False
33. What's the purpose of a Contribution Analysis? There may be multiple correct answers.
- It's another valuation methodology – a way of determining what an appropriate offer price for the seller might be, based on how much revenue / EBITDA / EPS etc. the buyer and seller are contributing
 - It's used to determine whether or not a deal is even viable, based on how much in revenue and profits a smaller seller can "contribute" to the buyer
 - It can tell you what the implied ownership percentages might be, post-transaction, assuming that it's an all-stock deal
 - It's used exclusively for private companies, in place of accretion / dilution analysis, since private companies do not have an EPS figure