NATIONAL UNIVERSITY OF SINGAPORE

EC2204: Financial Accounting for Economists

Semester 1, AY2018-2019

Time allowed: 2 Hours

Suggested Solutions

Question 1:

(a) (4 marks) Financial Statements are a key source of information for economists. Compare and contrast the Statement of Cash Flows with the Income Statement and Balance Sheet.

(b) (3 marks) Firms usually raise funds through debt or equity. Discuss the relative advantages of debt financing.

(c) "Embattled commodity trader Noble Group won over a major opponent of its US$3.5 billion (S$4.8 billion) **debt-for-equity restructuring plan**, ending months of accusations and lawsuits."

21st June 2018, The Straits Times

(3 marks) Explain why Noble Group might have proposed the exchange of debt for equity.

Suggested Solutions

(a) The Statement of Cash Flows reports cash receipts and cash payments of a business, from three broad categories of business activities: operating, investing, and financing. In comparison, the Income Statement reports revenues earned and expenses incurred during a period of time. It is prepared on an accrual basis.

The Balance Sheet reports the assets, liabilities, and equity of a business at a point in time. Consequently, the Statement of Cash Flows and related schedules indirectly report changes in the Balance Sheet by reporting operating, investing, and financing cash flows during a period of time, which caused changes in the balance sheet from one period to the next. In this way, the Statement of Cash Flows reports information to link together the financial statements from one period to the next, by explaining how operating, investing, and financing transactions caused changes in cash and other balance sheet accounts.

(b) There is no change in stockholder control when debt financing is used whereas the additional issuance of stock dilutes the control of existing stockholders. Furthermore, interest expense is tax deductible whereas dividends are not tax deductible. Finally, debt is usually cheaper than equity.

(c) Noble Group might have proposed the exchange of debt for equity to gain more flexibility in its future cash outflows. Debt typically requires periodic payment of interest until its mandatory principal repayment at maturity. On the other hand, equity does not require payment of dividends and equity does not require mandatory repayment.

Question 2:

On 1 January 2018, Turin Merchandise purchased a machine for use in operations. The total acquisition cost was $33,000. The machine has an estimated useful life of three years and a residual value of $3,000.

Assume that units produced by the machine will total 16,000 during 2018, 23,000 during 2019, and 21,000 during 2020.

(a) (5 marks) Using the following methods, find the depreciation expense **and** book value at the end of **2019**.

(i) Straight line
(ii) Units of Production
(iii) Double Declining

Consequently, explain which depreciation method will give rise to the highest profits in **2019.**

(b) (2 marks) On 1 January 2019, the machine was rebuilt at a cost of $7,000. After it was rebuilt, the total estimated life of the machine was increased to five years (from the original estimate of three years) and the residual value to $6,000 (from $3,000).

Assume that the company chose the straight-line method for depreciation, compute the annual depreciation expense after the change in estimates.

(c) (3 marks) Following (b), after the machine was rebuilt in 2019, it attracted many buyers. On 31 December 2020, the machine was finally sold for $7,500.

(i) Compute the book value on that date.
(ii) Prepare the journal entry to record the sale.

Suggested Solutions

(a) Consider the following table:

	Depreciation Expense			Book Value at End of Year		
Method	2018	2019	2020	2018	2019	2020
Straight-line	$10,000 (1)	**$10,000 (1)**	$10,000 (1)	$23,000	**$13,000**	$3,000
Units of production	8,000 (2)	**11,500 (3)**	10,500 (4)	25,000	**13,500**	3,000
Double-declining - balance	22,000 (5)	**7,333 (6)**	667 (7)	11,000	**3,667**	3,000

Calculations:
(1) ($33,000 − $3,000) ÷ 3 = $10,000
(2) 16,000 ÷ (16,000 + 23,000 + 21,000) × ($33,000 − $3,000) = $8,000
(3) 23,000 ÷ (16,000 + 23,000 + 21,000) × ($33,000 − $3,000) = $11,500
(4) 21,000 ÷ (16,000 + 23,000 + 21,000) × ($33,000 − $3,000) = $10,500
(5) ($33,000 − $0) × 2/3 = $22,000
(6) ($33,000 − $22,000) × 2/3 = $7,333
(7) ($33,000 − $22,000 − $7,333) × 2/3 = $2,445; however, recording this amount of depreciation expense in 2018 would cause the book value to drop below the residual value, so record only $667

(b)

Acquisition cost	$ 33,000
Less accumulated depreciation at December 31, 2018	(10,000)
Add extraordinary repair (considered to be an addition)	7,000
Book value at January 1, 2019	30,000
Less residual value	(6,000)
Revised depreciable cost	24,000
Divided by remaining useful life *(5 years — 1 year)*	÷ 4
Revised amount of annual depreciation	$ 6,000

(c) (i)

Acquisition cost		$33,000
Add rebuilding:		7,000
Balance in Machinery account		40,000
Accumulated Depreciation:		
2018	$10,000	
2019 through 2020 ($6,000 × 2)	12,000	22,000
Book value at December 31, 2020		$ 18,000

(ii)

Cash	7,500	
Accumulated Depreciation	22,000	
Loss on Disposal of PPE	10,500	
Machinery		40,000

Question 3:

(a) (5 marks) On 1 January 2018, Palermo Peach Ltd issued a 3-year bond with a face value of $50,000 and a stated interest rate of 7%. Because the market interest rate is 9%, the company receives $47,469 for the bond.

(i) Determine the interest expense and amount of the premium that will be amortized during the year ending 31 December 2018.

(ii) Prepare the journal entry to record the first interest payment on 31 December 2018.

(b) (5 marks) Consider the following list of financial statement items and amounts for Roma Rooms as of 31 March 2018, the end of its first year in operation.

Accounts Receivable	$ 40,000
Accounts Payable	30,000
Cash	10,000
Common Stock	20,000
Notes Payable	20,000
Equipment	50,000
Sales Revenue	100,000
Fuel Expense	15,000
Rent Expense	20,000
Advertising Expense	5,000
Salaries and Wages Expense	20,000
Dividends	10,000

Prepare the shareholders' equity section of the balance sheet as of 31 March 2018

Suggested Solutions

(a)(i)

Interest expense = Carrying value × Market interest rate × Time
= $47,469 × 0.09 = $4,272.21

Cash payment for interest = Face value × Stated interest rate × Time
= $50,000 × 0.07 = $3,500

Amortization of discount = Interest expense – Cash payment for interest
= $4,272 – $3,500 = $772.21

Alternatively, students can find the discount to be $50,000-47,469, and divide equally by 3 years.

(a)(ii)

Interest Expense	4,272.21	
Discount on Bonds Payable		772.21
Cash		3,500

(b)

Income Statement

For the Year Ended 31 March 2018

Sales Revenue	$100,000
Expenses	
Fuel Expense	15,000
Rent Expense	20,000
Advertising Expense	5,000
Wage Expense	20,000
Total Expenses	60,000
Net Income	$ 40,000
Retained Earnings (Opening balance)	$ 0
Add: Net Income	40,000
Subtract: Dividends	(10,000)
Retained Earnings (Closing balance)	$30,000
Stockholders' Equity	
Common Stock	20,000
Retained Earnings	30,000
Total Equity	50,000

Question 4:

Consider The Milan Company, a luxury bag maker. Its Balance Sheet for 31 December 2017 and the Income Statement for 2018 are shown below.

The Milan Company
Balance Sheet
31 December 2017

Assets	
Cash	$10,000
Accounts Receivable	5,000
Inventory	12,000
Property and Equipment, Net	20,000
	$47,000

Liabilities and Shareholders' Equity	
Accounts Payable	$10,000
Note Payable, Long-Term	5,000
Common Stock	20,000
Retained Earnings	12,000
	$47,000

The Milan Company
Income Statement
For the Year Ended 31 December 2018

Sales	$13,000
Cost of Goods Sold	3,000
Salaries and Wage Expense	3,000
Interest Expense	1,000
Other Expenses	500
Net Income	$ 5,500

Additional Information (that have not been reflected above):

- Sales were $13,000; $8,000 in cash was received from customers.
- Bought new land for cash, $10,000.
- Sold other land for its book value of $5,000.
- Paid $1,000 principal on the long-term note payable and $1,000 in interest.
- Issued new shares of stock for $10,000 cash.
- Cash dividends of $1,000 were declared and paid to stockholders.
- Paid $5,500 on accounts payable.
- No inventory purchases were made.
- All wages were paid in cash.
- Other expenses were on account.

(a) (6 marks) Prepare the Balance Sheet as at 31 December 2018.

(b) (4 marks) Prepare the Statement of Cash Flows (using the direct method).

Suggested Solutions

(a)

The Milan Company
Balance Sheet
31 December 2018

	2018	2017	Change	Reason for change
Cash	$11,500	$10,000	+1,500	Net increase in cash
Accounts Receivable	10,000	5,000	+5,000	$13,000 (sales) − $8,000 (collections)
Inventory	9,000	12,000	−3,000	Cost of goods sold
PPE	25,000	20,000	+5,000	$10,000 (land bought) − $5,000 (sold)
	$55,500	$47,000		
Accounts Payable	$5,000	$10,000	−5,000	−$5,500 (AP paid) + $500 (expenses)
Note Payable, LT	4,000	5,000	−1,000	(principal paid)
Common Stock	30,000	20,000	+10,000	Issuance of stock for cash
Retained Earnings	16,500	12,000	+4,500	$5,500 (net income) − $1,000 (cash dividends)
	$55,500	$47,000		

(b)

The Milan Company
Statement of Cash Flows
Year ending December 31, 2018

Cash Flows from Operating Activities	
Cash collected from customers	$ 8,000
Cash paid to suppliers of inventory	(5,500)
Cash paid to employees	(3,000)
Cash paid for interest	(1,000)
Net cash used in operating activities	(1,500)
Cash Flows from Investing Activities	
Purchase of land	(10,000)
Proceeds from sale of land	5,000
Net cash used in investing activities	(5,000)
Cash Flows from Financing Activities	
Payments on long-term debt	(1,000)
Payment of cash dividends	(1,000)
Proceeds from issuing common stock	10,000
Net cash provided by financing activities	8,000
Net increase in cash during the year	1,500
Cash and cash equivalents, beginning of period	10,000
Cash and cash equivalents, end of period	$11,500

Question 5:

(a) (5 marks) Liquidity ratios seek to examine the firm's ability to survive in the short run.

The financial information below presents selected information from the Financial Statements of Lazio Leggings, a company that specializes in leggings. Sales revenue during the current year was $13,700,300 and cost of goods sold was $8,905,195. All of the sales are made on account and are due within 30 days.

	Prior Year	Current Year
Cash and cash equivalents	$ 552,330	$ 599,780
Accounts receivable	4,550,000	3,800,000
Inventory	920,360	1,223,440
Total current assets	8,700,030	8,480,100
Total assets	11,100,020	10,980,000
Total current liabilities	7,200,300	7,476,000
Total liabilities	8,449,900	8,240,700

Using relevant ratios, evaluate the company's liquidity position at the end of the current year.

(b) (5 marks) In the long run, solvency ratios are more useful to examine the firm's capacity to meet its financial commitments.

Evaluate the different components of the Altman Z-Score in predicting bankruptcy.

Suggested Solutions

(a)

Current ratio = Current assets ÷ Current Liabilities
Current year's ratio = $8,480,100 ÷ $7,476,000 = 1.13
Prior year's ratio = $8,700,030 ÷ $7,200,300 = 1.21

Receivables turnover = Net credit sales ÷ Average net receivables
= $13,700,300 ÷ [($4,550,000 + $3,800,000) ÷ 2)] = 3.28

Days to collect = 365 ÷ Receivables turnover
= 365 ÷ 3.28 = 111.3

Inventory turnover = Cost of goods sold ÷ Average inventory
= $8,905,195 ÷ [($(920,360 + $1,223,440) ÷ 2)] = 8.31

Days to sell = 365 ÷ Inventory turnover
= 365 ÷ 8.31 = 43.9

The current ratio measures the company's ability to pay its current liabilities. The current ratio declined from 1.21 to 1.13; however, a current ratio greater than 1.0 is often considered acceptable.

The receivables turnover ratio indicates how frequently sales are made and collected during the year. The measure "days to collect" converts the receivables turnover ratio into the average number of days needed to collect each receivable. Assuming terms of 30 days, the receivables turnover of 3.28 is slow. On average, even though the credit terms are 30 days, on average, it takes the company over 111 days to collect its receivables.

The inventory turnover ratio indicates how frequently inventory is bought and sold during the year. The measure "days to sell" converts the inventory turnover ratio into the average number of days needed to sell each purchase of inventory. An inventory turnover of 8.31 and days to sell of 43.9 may be adequate, but it would be helpful to know what industry Pelican operates in and the industry averages for these two ratios. Knowing the company's ability to access credit would be helpful in further evaluating its liquidity.

(b)

The Altman Z-score formula is as follows:

$$Z = 1.2X_1 + 1.4X_2 + 3.3X_3 + 0.6X_4 + 1.0X_5.$$

X_1 = working capital / total assets. Measures liquid assets in relation to the size of the company.

X_2 = retained earnings / total assets. Measures profitability that reflects the company's age and earning power.
X_3 = earnings before interest and taxes / total assets. Measures operating efficiency apart from tax and leveraging factors. It recognizes operating earnings as being important to long-term viability.

X_4 = market value of equity / book value of total liabilities. Adds market dimension that can show up security price fluctuation as a possible red flag.

X_5 = sales / total assets. Standard measure for total asset turnover (varies greatly from industry to industry).

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