**EIN 5359 Industrial Financial Decisions**

**Spring 2017**

**Exam II April 18, 2017**

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PID:5965823

1a. Cash budget for the XYZ Store for the first six month of 2017: (next page)

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | October 2016 | November  2016 | December  2016 | **January**  **2017** | **February**  **2017** | **March**  **2017** | **April**  **2017** | **May**  **2017** | **June**  **2017** | July  2017 |
| Sales | $300,000 | $340,000 | $270,000 | $240,000 | $250,000 | $240,000 | $340,000 | $290,000 | $220,000 | $320,000 |
| Credit  Sales  88% | $264,000 | $299,200 | $237,600 | $211,200 | $220,000 | $211,200 | $299,200 | $255,200 | $193,600 | $281,600 |
| Cash  Sales  12% | $36,000 | $40,800 | $32,400 | $28,800 | $30,000 | $28,800 | $40,800 | $34,800 | $26,400 | $38,400 |
| Cash Collections | |  |  |  |  |  |  |  |  |  |
| 55% in the month |  | $145,200 | $164,560 | $130,680 | $116,160 | $121,000 | $116,160 | $164,560 | $140,360 | $106,480 |
| 25% of second month |  |  | $66,000 | $74,800 | $59,400 | $52,800 | $55,000 | $52,800 | $74,800 | $63,800 |
| 20% of third month |  |  |  | $52,800 | $59,840 | $47,520 | $42,240 | $44,000 | $42,240 | $59,840 |
| Total cash receipts |  |  |  | $287,080 | $265,400 | $250,120 | $254,200 | $296,160 | $283,800 | $268,520 |
| Purchase ordering | $251,600 | $199,800 | $177,600 | $185,000 | $177,600 | $251,600 | $214,600 | $162,800 | $236,800 |  |
| Pay the Purchase |  | $251,600 | $199,800 | $177,600 | $185,000 | $177,600 | $251,600 | $214,600 | $162,800 | $236,800 |
| Wages and Salaries |  |  |  | $40,000 | $45,000 | $55,000 | $50,000 | $65,000 | $55,000 |  |
| Rent |  |  |  | $6,000 | $6,000 | $6,000 | $6,000 | $6,000 | $6,000 |  |
| Interest |  |  |  |  |  | $8,500 |  |  | $8,500 |  |
| Tax |  |  |  |  |  |  | $60,000 |  |  |  |
| Capital  Investment | |  |  |  |  |  |  |  | $60,000 |  |
| Total Cash disbursements | |  |  | $223,600 | $236,000 | $247,100 | $367,600 | $285,600 | $292,300 |  |
| Net cash flow | |  |  | $63,480 | $29,400 | $3,020 | ($113,400) | $10,560 | ($8,500) |  |
| Beginning Cash Balance | |  |  | $90,000 | $153,480 | $182,880 | $185,900 | $72,500 | $83,060 |  |
| Ending cash balance without additional financing | |  |  | $153,480 | $182,880 | $185,900 | $72,500 | $83,060 | $74,560 |  |
| Borrowing | |  |  |  |  |  | $20,000 | $10,000 | $20,000 |  |
| Ending cash balance after additional financing | |  |  | $153,480 | $182,880 | $185,900 | $92,500 | $93,060 | $94,560 |  |

1b. Forecast income statement for the first half of 2017 for XYZ store:

|  |  |  |
| --- | --- | --- |
|  |  | ASSUMPTIONS |
| Net sales | $1,580,000 | * Based on sales estimated in Part (a) |
| Cost of goods sold | $1,169,200 | * Based on Part (a) 74% |
| Gross profit | $410,800 |  |
| Operating Expenses |  |  |
| Wages and salaries | $310,000 | * Based on Part (a) |
| Rent | $36,000 | * Rent is $6,000 a month |
| Interest | $17,000 | * $8,500 per quarter |
| Depreciation | $12,500 | * Straight-line basis on $250,000 of 10 years, so $25,000 per year |
| Total expenses | $375,500 |  |
| Profit before taxes | $35,300 |  |
| Taxes | $12,000 | * Tax rate is 34% |
| Profit after taxes | $23,300 |  |
| Dividends | $0 |  |
| Increase in retained earnings | $23,300 |  |

1c. Forecast balance sheet as of June 30, 2017 for XYZ Store:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| ASSETS | ACTUAL  12-31 | CHANGE | FORECAST  6-30 | ASSUMPTIONS |
| Cash | $90,000 | +$4,560 | $94,560 | * Based on cash budget |
| Receivables | $427,500 | -$59,220 | $368,280 | * 100% June plus 45% May, 20% April credit sales |
| Inventory | $220,000 | +$59,200 | $279,000 | * $220,000 plus forecast purchases minus forecast cost of goods sold |
| Fixed assets, net | $250,000 | +$47,500 | $297,500 | * Capital expenditures of $60,000 and depreciation expected to be $12,500 |
| Total assets | $987,500 | +51,840 | $1,039,340 |  |
|  | | | | |
| LIABILITIES |  |  |  |  |
| Bank borrowings | $0 | +$20,000 | $20,000 | * Additional financing |
| Accounts payable | $140,000 | $0 | $140,000 | * No change expected |
| Bonds | $500,000 | $0 | $500,000 | * No change expected |
| Common stock and retained earnings | $347,500 | +$23,300 | $370,800 | * Based on part (b) |
| Total liabilities | $987,500 | +$43,300 | $1,030,800 |  |

2a.

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Years | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| Truck A | $76,000 |  |  |  |  |  |  |  |  |
| Maintenance |  | -$2,000 | -$2,000 | -$2,000 | -$2,000 | -$13,000 | -$4,000 | -$4,000 | -$4,000 |
| Scrap value |  |  |  |  |  |  |  |  | $9,000 |
| Depreciation rate |  | 20% | 32% | 19.20% | 11.52% | 11.52% | 5.76% |  |  |
| Depreciation |  | -$15,200 | -$24,320 | -$14,592 | -$8,755 | -$8,755 | -$4,378 |  |  |
| Total cost |  | -$17,200 | -$26,320 | -$16,592 | -$10,755 | -$21,755 | -$8,378 | -$4,000 | -$4,000 |
| Tax (rate 35%) |  | $6,020 | $9,212 | $5,807 | $3,764 | $7,614 | $2,932 | $1,400 | $1,400 |
| Net cash flow after tax |  | -$11,180 | -$17,108 | -$10,785 | -$6,991 | -$14,141 | -$5,445 | -$2,600 | -$2,600 |
| PV of Cash flows | -$76,000 | $4,020 | $7,212 | $3,807 | $1,764 | -$5,386 | -$1,068 | -$2,600 | $3,250 |
| **NPV (10%)** | **-$66,084.58** |  |  |  |  |  |  |  |  |
| **NPV (15%)** | **-$66,593.29** |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |
| Truck B | $50,000 |  |  |  |  |  |  |  |  |
| Maintenance |  | -$3,000 | -$4,500 | -$6,000 | -$22,500 | -$9,000 | -$10,500 | -$12,000 | -$13,500 |
| Scrap value |  |  |  |  |  |  |  |  | $5,000 |
| Depreciation rate |  | 20% | 32% | 19.20% | 11.52% | 11.52% | 5.76% |  |  |
| Depreciation |  | -$10,000 | -$16,000 | -$9,600 | -$5,760 | -$5,760 | -$2,880 |  |  |
| Total cost |  | -$13,000 | -$20,500 | -$15,600 | -$28,260 | -$14,760 | -$13,380 | -$12,000 | -$13,500 |
| Tax (rate 35%) |  | $4,550 | $7,175 | $5,460 | $9,891 | $5,166 | $4,683 | $4,200 | $4,725 |
| Net cash flow after tax |  | -$8,450 | -$13,325 | -$10,140 | -$18,369 | -$9,594 | -$8,697 | -$7,800 | -$8,775 |
| PV of Cash flows | -$5,000 | $1,550 | $2,675 | -$540 | -$12,609 | -$3,834 | -$5,817 | -$7,800 | -$5,525 |
| **NPV (10%)** | **-$67,642.24** |  |  |  |  |  |  |  |  |
| **NPV (15%)** | **-$63,353.25** |  |  |  |  |  |  |  |  |

The lower NPV is better for the cost, so

b) Truck A should be accept c) Truck B should be accept

3.

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Proposal | A | B | C | D | E | F | G |
| MARR | 11.00% | 11.00% | 11.00% | 11.00% | 11.00% | 11.00% | 11.00% |
| Investment | -$30,000 | -$12,000 | -$55,000 | -$45,000 | -$20,000 | -$65,000 | -$25,000 |
| 1 | 7,000 | 2,400 | 10,000 | 12,000 | 4,000 | 11,500 | 7,500 |
| 2 | 7,000 | 2,400 | 10,000 | 12,000 | 4,000 | 11,500 | 7,500 |
| 3 | 7,000 | 2,400 | 10,000 | 12,000 | 4,000 | 11,500 | 7,500 |
| 4 | 7,000 | 2,400 | 10,000 | 12,000 | 4,000 | 11,500 | 7,500 |
| 5 | 7,000 | 2,400 | 10,000 | 12,000 | 4,000 | 11,500 | 7,500 |
| 6 | 7,000 | 2,400 | 10,000 | 12,000 | 4,000 | 11,500 | 7,500 |
| 7 | 7,000 | 2,400 | 10,000 | 12,000 | 4,000 | 11,500 | 7,500 |
| 8 | 7,000 | 2,400 | 10,000 | 12,000 | 4,000 | 11,500 | 7,500 |
| 9 | 7,000 | 2,400 | 10,000 | 12,000 | 4,000 | 11,500 | 7,500 |
| 10 | 10,000 | 2,400 | 15,000 | 14,000 | 4,500 | 11,500 | 8,500 |
| NPV | $12,281.18 | $2,134.16 | $5,653.24 | $26,375.15 | $3,733.02 | $2,726.17 | $19,521.42 |
| IRR | 19.36% | 15.10% | 12.66% | 23.41% | 15.10% | 11.99% | 27.44% |

1. A+G<=1

C+D<=1

B<=C+D

1. As A and G are mutually exclusive, the G should be selected which has higher NPV

As C and D are mutually exclusive, the D should be selected which has higher NPV

If limit is $120,000, the BDEG should be choose, the total investment is $10200 and total NPV is the highest $51,763.75