ACCY 500: Accounting Measurement, Reporting and Control

Fall 2019

FINAL EXAM SOLUTIONS

**You have 5 hours to answer all questions. Please return the exam with your answers provided in the designated spaces. Points are awarded for neatness while irrelevant discussions will be penalised. All answers should be written only in this booklet and should be limited to the space provided. Make sure you write your name on the front page as well as the remaining pages.**

**Notes**:

1. **Good Luck! ☺**
2. Be sure to **attempt all questions and show all work.** We may give some partial credit.

**Structure**

Part 1: Multiple Choice (60 points) \_\_\_\_\_\_\_

Part 2: 3M (80 points) \_\_\_\_\_\_\_

Part 3: Essay Questions (10 points) \_\_\_\_\_\_

Part 4: Bonus Question (5 points) \_\_\_\_\_\_

Total Exam Points (out of 150) \_\_\_\_\_\_\_

# Part 1: Multiple Choice [60 points]

**[3 points each, 60 points total]**

**Circle one answer only.**

1. On June 30, 2017, Edelman Enterprises purchased a 5-year insurance policy on its equipment for $4,000,000. This is the only insurance policy Edelman has in place. As of December 31, 2018, what would be the balance for Edelman Enterprise’s prepaid insurance?

1. $2,100,000
2. $2,400,000
3. **$2,800,000**
4. $1,000,000
5. $4,000,000

2. Belichick Inc. paid Company X for services to be performed in the following year. What effect would this transaction have on Company X’s balance sheet?

**A) Assets Increase; Liabilities Increase**

B) Assets Increase; Assets Decrease

C) Liabilities Increase; Shareholders’ Equity Increase

D) Assets Increase; Shareholders’ Equity Increase

E) Assets Decrease; Liabilities Decrease

3. On October 1, 2016, SM Co. signed a two-year contract to provide handyman services to OU Associates, with the contract to start immediately. OU agreed to pay SM $12,000 for the two-year period. SM is confident that OU will pay that amount, but payment is not scheduled to occur until 2017. How much revenue should SM recognize in 2016?

A) $0

B) $6,000

C) $10,500

D) $12,000

**E) $1,500**

4. For the year ended December 31, 2018, Bennett Beauty Co. earned net income of 1,000,000 and had comprehensive income of 1,100,000. During 2018, Bennett had 50,000 shares of common stock outstanding and convertible bonds as of December 31, 2018 that could be converted into 25,000 shares of common stock. Bennett did not have dividends of any kind during 2018. What was Bennett’s Basic EPS?

A) 16.67

B) 18.18

**C) 20.00**

D) 18.33

E) 42.00

5. J. Develin sold machinery for $10,000 that was originally purchased for $20,000. J. Develin had already recorded depreciation of $18,000 associated with this machinery. The fair value of the machinery at the date of sale was $12,000. What is the amount of J. Develin’s gain/loss on disposal?

A) $2,000 gain

B) $2,000 loss

C) $8,000 loss

**D) $8,000 gain**

E) $10,000 gain

6. Under what circumstances are research and development (R&D) costs capitalized on the balance sheet?

1. Under no circumstances
2. **R&D purchased in a business acquisition**
3. R&D related to internally developed software
4. R&D expected to be sold
5. Both B and C

7. J. Gordon paid $1,200 for a 6-month ceramics course starting on June 1,2018 with Ceramics R Us. For this transaction, as of August 1, 2018, the accounting records of Ceramics R Us would indicate:

A) $400 of revenue; $800 of accounts receivable

**B) $400 of revenue; $800 of deferred revenue**

C) $1,200 of revenue; $1,200 of cash

D) $800 of revenue; $400 of accounts receivable

E) $0 of revenue; $1,200 of cash

8. Brady Inc. reported FIFO ending inventory of $114,000 and FIFO beginning inventory of $110,000 for 2018. Inventory purchases for 2018 were $237,500 and the change in the LIFO reserve from 2017 was an increase in the LIFO reserve of $675. Calculate the value of COGS LIFO for Brady Inc. in 2018 (Assume that there are no inventory write-downs).

1. **$234,175**
2. $232,825
3. $234,575
4. $236,900
5. $237,500

9. If a bond sells for less than its face value, the market rate of interest is:

1. **Higher than the coupon rate**
2. Dependent on the coupon rate
3. Equal to the coupon rate
4. Lower than the coupon rate
5. Not enough information to answer

10. Which of the following is not an example of a contingent liability?

A) Warranty Accrual

B) Pending Litigation

C) Asbestos Reserve

D) Environmental Liability

**E) Accounts Payable**

11. What are the three sections of the statement of cash flows?

A) Financing, Borrowing, Operating

**B) Operating, Investing, Financing**

C) Investing, Operating, Equity

D) Selling, Investing, Financing

E) Selling, Investing, Borrowing

12. What is the accumulated depreciation of equipment sold during the year if opening accumulated depreciation is $20,000, depreciation expense is $10,000 and closing accumulated depreciation is $10,000 (Assume that there are no asset write-downs)?

A) $5,000

B) $10,000

C) $15,000

**D) $20,000**

E) $30,000

13. The Income Statement for J. White Company shows Cost of Sales of $60,000, Administrative Expenses of $30,000, Rental Expenses of $10,000, Interest Revenue of $20,000, Interest Expense of $15,000, and Net Income after Taxes of $60,000. Assuming there are no other items to be considered and that the Income Taxes are 25% of Net Income before Taxes, what is sales revenue?

A) $150,000

B) $125,000

**C) $175,000**

D) $180,000

E) $160,000

14. In order for a liability to be recognized, which of the following must be true?

A) Liability represents a probable future sacrifice of economic values

B) Amount of the liability must be estimable (measurable)

C) Liability is due to past transactions or events

D) **All of the above**

E) None of the above

15. A firm with 25,000 shares outstanding pays $3 per share as dividends. What would be the impact of this entry?

**A) Decrease Cash $75,000; Decrease Retained Earnings $75,000**

B) Decrease Cash $75,000; Increase Retained Earnings $75,000

C) Decrease Cash $25,000; Decrease Retained Earnings $25,000

D) Decrease Cash $25,000; Increase Retained Earnings $25,000

E) Decrease Cash $75,000; Decrease Net Income $75,000

16. Which of the following items does not demonstrate the concept of conservatism?

1. Revenues are recognized only when they are earned
2. Losses are recognized even when there is uncertainty for the losses to happen
3. Provision accounts reduce the value of assets or create a liability
4. Inventory is recorded at the lower of cost or market
5. **Gains are recognized even when there is uncertainty for the gains to happen**

17. Thomas Technologies issued 10% bonds with a face amount of $80 million on January 1, 2011. The bonds mature on December 31, 2020 (10 years). The market rate is 12%. Interest is paid semi-annually on June 30 and December 31. What is the present value of the bonds on January 1, 2011?

A) $71,926,088

B) $88,526,412

C) $82,987,389

D) $24,944,378

**E) $70,824,063**

18. How much cash was received from customers during the year based on the following information?

Net Sales: $12,000

Ending Net Receivables: $3,000

Beginning Net Receivables: $2,000

1. **$11,000**
2. $12,000
3. $15,000
4. $13,000
5. $10,000

19. Which of the following items would be included in the Investing Activities section of the Statement of Cash Flows under the Indirect Method?

1. Equity issuance
2. **Purchases of Property and Equipment**
3. Bank loan repayment
4. Changes in Accounts Payable
5. Purchases of Treasury Stock

20. Which of the following fundamental accounting concepts calls for revenues and associated expenses to be recorded in the same period?

1. Accruals
2. **Matching**
3. Consistency
4. Going concern
5. Revenue recognition

**Part 2. 3M [80 points]**

Please consider the excerpts from 3M annual report for fiscal year 2018 below and answer the following questions using only this information.

1. Which cost flow assumption(s) does 3M use to value its inventory? [5 points]

*FIFO.*

1. What is the amount of inventory purchases in fiscal year 2018 (Assume that there are no inventory write-downs)? [5 points]

*End Inventory = Beg Inventory + Inventory purchases – COGS – Inventory write-downs*

*4,366 = 4,034 + Inventory purchases – 16,682 – 0*

*Inventory purchases = $17,014 million*

*OR*

*Inventory purchases = COGS + Change in Inventory from CFS*

*= 16,682 + 509*

*= $17,191 million*

1. Estimate cash collected from customers in fiscal year 2018 (Assume that sales are net of bad debt expense). [5 points]

*Collections = Beg. Net AR + Sales – End. Net AR*

*= 4,911 + 32,765 -5,020*

*= $32,656 million*

*OR*

*Collections = Sales – Change in AR from CFS*

*= 32,765 - 305*

*= $32,460 million*

1. Estimate cash paid to suppliers in fiscal year 2018. [5 points]

*Cash paid to suppliers = Beg. Payables + Purchases – End. Payables*

*= 1,945 + 17,014 (from question 2) – 2,266*

*= $16,693 million*

*OR*

*Cash paid to suppliers = Purchases calculated using CFS – Change in AP from CFS*

*= 17,191 (from question 2) – 408*

*= $16,783 million*

1. Assume that 3M measures bad debt expenses as 1% of beginning gross receivables. Calculate the amount of bad debts written off in fiscal year 2018. [5 points]

*Write-offs = Beg. Allowance + Bad Debt Expense – End. Allowance*

*= 103 + 1% \* (4,911 + 103) – 95 = $58 million*

1. What is the number of issued shares at the end of fiscal year 2018? [5 points]

*Issued shares = Outstanding shares + Treasury shares*

*= 576,575,168 + 367,457,888 = 944,033,056 shares*

1. How much did the Company spend in cash in re-acquiring its own shares during fiscal year 2018? How much did the Company spend in cash in dividends in 2018? [5 points]

*$4,870 million and $3,193 million respectively*

1. What was the average price 3M received (regardless of whether cash is collected) from re-issuing shares for stock options and benefit plans during fiscal year 2018? What is dividends declared per share in 2018? [5 points]

*$500,000,000 / 5,217,224 = $95.84 and $5.44 respectively*

1. Refer to the medium-term notes due in 2048 (towards the end in debt footnote). What kind of bond is this? How do you know? [5 points]

*Discount bond because principal is higher than current carrying value.*

1. Refer to the medium-term notes due in 2048 (towards the end in debt footnote). Calculate the interest expense on this note for fiscal year 2019. [5 points]

*$637 \* 4.07% = $25.93 million*

1. What is the net book value of 3M’s property, plant and equipment at the end of fiscal year 2018? [5 points]

*$8,738 million*

1. What is the amount of additions to property, plant and equipment account during fiscal year 2018 (Assume that all property, plant and equipment acquisitions are paid in cash)? [5 points]

*$1,577 million*

1. 3M has disposed of some property, plant and equipment during fiscal year 2018. Assume that there has been no asset impairment over the year. What is the original acquisition cost of the PPE disposed of during the fiscal year 2018? [5 points]

*Beg Gross PPE + PPE acquisitions – PPE Disposals – PPE Impairment = End Gross PPE*

*24,914 + 1,577 – PPE Disposals – 0 = 24,873*

*PPE Disposals = $1,618 million*

1. What is the accumulated depreciation of the disposed property, plant and equipment in year 2018 (Assume that there is no amortization)? [5 points]

*Beg AD + Depreciation Expense – AD of Disposals = End AD*

*16,048 + 1,488 – AD of Disposals = 16,135*

*AD of disposals = $1,401 million*

1. What is the impact of gain / loss from the asset disposals in the previous question on cash flows from operations [5 points]

*0*

1. What is the par value of each share? [5 points]

*$0.01*

|  |
| --- |
| **3M Company and Subsidiaries Consolidated Statement of Income Years ended December 31** |
| **(Millions, except per share amounts)** | **2018** | **2017** |
| Net sales | **$ 32,765** | $ 31,657 |
| Operating expenses |  |  |
| Cost of sales | **16,682** | 16,055 |
| Selling, general and administrative expenses | **7,602** | 6,626 |
| Research, development and related expenses | **1,821** | 1,870 |
| Gain on sale of businesses | **(547)** | (586) |
| Total operating expenses | **25,558** | 23,965 |
| Operating income | **7,207** | 7,692 |
|  |  |  |
| Other expense (income), net | **207** | 144 |
|  |  |  |
| Income before income taxes | **7,000** | 7,548 |
| Provision for income taxes | **1,637** | 2,679 |
| Net income including noncontrolling interest | **$ 5,363** | $ 4,869 |
|  |  |  |
| Less: Net income attributable to noncontrolling interest | **14** | 11 |
|  |  |  |
| Net income attributable to 3M | **$ 5,349** | $ 4,858 |
|  |  |  |
| Weighted average 3M common shares outstanding — basic | **588.5** | 597.5 |
| Earnings per share attributable to 3M common shareholders — basic | **$ 9.09** | $ 8.13 |
|  |  |  |
| Weighted average 3M common shares outstanding — diluted | **602.0** | 612.7 |
| Earnings per share attributable to 3M common shareholders — diluted | **$ 8.89** | $ 7.93 |

|  |  |  |
| --- | --- | --- |
| **3M Company and Subsidiaries Consolidated Balance Sheet**  **At December 31** |  | |
| **(Dollars in millions, except per share amount)** | **December 31,**  **2018** | **December 31,**  **2017** |
| **Assets** |  |  |
| Current assets |  |  |
| Cash and cash equivalents | **$ 2,853** | $ 3,053 |
| Marketable securities — current | **380** | 1,076 |
| Accounts receivable — net of allowances of $95 and $103 | **5,020** | 4,911 |
| Inventories |  |  |
| Finished goods | **2,120** | 1,915 |
| Work in process | **1,292** | 1,218 |
| Raw materials and supplies | **954** | 901 |
| Total inventories | **4,366** | 4,034 |
| Prepaids | **741** | 937 |
| Other current assets | **349** | 266 |
| Total current assets | **13,709** | 14,277 |
| Property, plant and equipment | **24,873** | 24,914 |
| Less: Accumulated depreciation | **(16,135)** | (16,048) |
| Property, plant and equipment — net | **8,738** | 8,866 |
| Goodwill | **10,051** | 10,513 |
| Intangible assets — net | **2,657** | 2,936 |
| Other assets | **1,345** | 1,395 |
| Total assets | **$ 36,500** | $ 37,987 |
| **Liabilities** |  |  |
| Current liabilities |  |  |
| Short-term borrowings and current portion of long-term debt | **$ 1,211** | $ 1,853 |
| Accounts payable | **2,266** | 1,945 |
| Accrued payroll | **749** | 870 |
| Accrued income taxes | **243** | 310 |
| Other current liabilities | **2,775** | 2,709 |
| Total current liabilities | **7,244** | 7,687 |
|  |  |  |
| Long-term debt | **13,411** | 12,096 |
| Pension and postretirement benefits | **2,987** | 3,620 |
| Other liabilities | **3,010** | 2,962 |
| Total liabilities | **$ 26,652** | $ 26,365 |
| **Equity** |  |  |

3M Company shareholders’ equity:

|  |  |  |
| --- | --- | --- |
| Common stock par value, $.01 par value | **$ 9** | **$ 9** |
| Shares outstanding - 2018: 576,575,168 |  |  |
| Shares outstanding - 2017: 594,884,237 |  |  |
| Additional paid-in capital | **5,643** | 5,352 |
| Retained earnings | **40,636** | 39,115 |
| Treasury stock | **(29,626)** | (25,887) |
| Accumulated other comprehensive income (loss) | **(6,866)** | (7,026) |
| Total 3M Company shareholders’ equity | **9,796** | 11,563 |
| Noncontrolling interest | **52** | 59 |
| Total equity | **$ 9,848** | $ 11,622 |
| Total liabilities and equity | **$ 36,500** | $ 37,987 |

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|  |
| --- |
| **3M Company and Subsidiaries Consolidated Statement of Cash Flows Years ended December 31** |
| **(Millions)** | **2018** | **2017** |
| **Cash Flows from Operating Activities** |  |  |
| Net income including noncontrolling interest | **$ 5,363** | $ 4,869 |
| Adjustments to reconcile net income including noncontrolling interest to net cash provided by operating activities |  |  |
| Depreciation and amortization | **1,488** | 1,544 |
| Company pension and postretirement contributions | **(370)** | (967) |
| Company pension and postretirement expense | **410** | 334 |
| Stock-based compensation expense | **302** | 324 |
| Gain on sale of businesses | **(545)** | (586) |
| Deferred income taxes | **(57)** | 107 |
| Changes in assets and liabilities |  |  |
| Accounts receivable | **(305)** | (245) |
| Inventories | **(509)** | (387) |
| Accounts payable | **408** | 24 |
| Accrued income taxes (current and long-term) | **134** | 967 |
| Other — net | **120** | 256 |
| Net cash provided by (used in) operating activities | **6,439** | 6,240 |
|  |  |  |
| **Cash Flows from Investing Activities** |  |  |
| Purchases of property, plant and equipment (PP&E) | **(1,577)** | (1,373) |
| Proceeds from sale of PP&E and other assets | **262** | 49 |
| Acquisitions, net of cash acquired | **13** | (2,023) |
| Purchases of marketable securities and investments | **(1,828)** | (2,152) |
| Proceeds from maturities and sale of marketable securities and investments | **2,497** | 1,354 |
| Proceeds from sale of businesses, net of cash sold | **846** | 1,065 |
| Other — net | **9** | (6) |
| Net cash provided by (used in) investing activities | **222** | (3,086) |
|  |  |  |
| **Cash Flows from Financing Activities** |  |  |
| Change in short-term debt — net | **(284)** | 578 |
| Repayment of debt (maturities greater than 90 days) | **(1,034)** | (962) |
| Proceeds from debt (maturities greater than 90 days) | **2,251** | 1,987 |
| Purchases of treasury stock | **(4,870)** | (2,068) |
| Proceeds from issuance of treasury stock pursuant to stock option and benefit plans | **485** | 734 |
| Dividends paid to shareholders | **(3,193)** | (2,803) |
| Other — net | **(56)** | (121) |
| Net cash provided by (used in) financing activities | **(6,701)** | (2,655) |
|  |  |  |
| Effect of exchange rate changes on cash and cash equivalents | **(160)** | 156 |
|  |  |  |
| Net increase (decrease) in cash and cash equivalents | **(200)** | 655 |
| Cash and cash equivalents at beginning of year | **3,053** | 2,398 |
| Cash and cash equivalents at end of period | **$ 2,853** | $ 3,053 |

**Inventory**

Inventories are stated at the lower of cost or net realizable value (NRV), which is defined as estimated selling prices in the ordinary course of business, less reasonably predictable costs of completion, disposal and transportation market. Cost is determined on a first-in, first-out basis.

**Debt**

**Currency/ Effective Final**

**(Millions) Fixed vs. Interest Maturity Carrying Value**

**Description / 2018 Principal Amount Floating Rate Date 2018 2017**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Medium-term note (repaid in 2018) | Euro Floating | — % | — | **—** | 600 |
| Medium-term note (repaid in 2018) | USD Floating | — % | — | **—** | 448 |
| Medium-term note ($600 million) | USD Floating | 1.74 % | 2019 | **596** | 596 |
| Medium-term note ($25 million) | USD Fixed | 1.74 % | 2019 | **25** | 25 |
| Medium-term note (650 million Euros) | Euro Floating | — % | 2020 | **743** | 779 |
| Medium-term note ($300 million) | USD Floating | 2.61 % | 2020 | **294** | 296 |
| Medium-term note ($200 million) | USD Floating | 2.69 % | 2020 | **197** | 198 |
| Eurobond (300 million Euros) | Euro Floating | — % | 2021 | **357** | 378 |
| Eurobond (300 million Euros) | Euro Fixed | 1.97 % | 2021 | **341** | 358 |
| Medium-term note ($600 million) | USD Fixed | 1.63 % | 2021 | **599** | 598 |
| Medium-term note ($200 million) | USD Fixed | 3.07 % | 2021 | **199** | — |
| Medium-term note ($200 million) | USD Floating | 3.07 % | 2021 | **201** | — |
| Medium-term note (500 million Euros) | Euro Fixed | 0.45 % | 2022 | **570** | 597 |
| Medium-term note ($600 million) | USD Fixed | 2.17 % | 2022 | **596** | 595 |
| Medium-term note (600 million Euros) | Euro Fixed | 1.14 % | 2023 | **680** | 712 |
| Medium-term note ($650 million) | USD Fixed | 2.26 % | 2023 | **648** | 647 |
| Medium-term note ($300 million) | USD Floating | 2.91 % | 2024 | **299** | — |
| Medium-term note ($300 million) | USD Fixed | 3.30 % | 2024 | **298** | — |
| Medium-term note ($550 million) | USD Fixed | 3.04 % | 2025 | **547** | 546 |
| Medium-term note (750 million Euros) | Euro Fixed | 1.65 % | 2026 | **844** | 885 |
| Medium-term note ($650 million) | USD Fixed | 2.37 % | 2026 | **642** | 641 |
| Medium-term note ($850 million) | USD Fixed | 2.95 % | 2027 | **841** | 839 |
| 30-year debenture ($220 million) | USD Fixed | 6.01 % | 2028 | **226** | 227 |
| Medium-term note ($600 million) | USD Fixed | 3.62 % | 2028 | **597** | — |
| Medium-term note (500 million Euros) | Euro Fixed | 1.90 % | 2030 | **562** | 589 |
| Medium-term note (500 million Euros) | Euro Fixed | 1.54 % | 2031 | **567** | 595 |
| 30-year bond ($555 million) | USD Fixed | 5.73 % | 2037 | **551** | 550 |
| Floating rate note ($96 million) | USD Floating | 2.45 % | 2041 | **95** | 95 |
| Medium-term note ($325 million) | USD Fixed | 4.05 % | 2044 | **314** | 313 |
| Floating rate note ($55 million) | USD Floating | 2.43 % | 2044 | **53** | 54 |
| Medium-term note ($500 million) | USD Fixed | 3.37 % | 2046 | **474** | 473 |
| Medium-term note ($500 million) | USD Fixed | 3.68 % | 2047 | **491** | 491 |
| Medium-term note ($650 million) | USD Fixed | 4.07 % | 2048 | **637** | — |
| Other borrowings | Various | 2.35 % | 2019-2040 | **72** | 73 |
| Total long-term debt |  |  |  | **$ 14,156** | $ 13,198 |
| Less: current portion of long-term debt |  |  |  | **745** | 1,102 |
| Long-term debt (excluding current portion) |  |  |  | **$ 13,411** | $ 12,096 |

# Part 3: Essay Questions [10 points]

* + - 1. One of the most profitable products of Apple is the iPhone. When Apple sells an iPhone, the buyer gets a phone, together with the right to free software upgrades. Discuss when Apple should recognize revenue related to the iPhone along with any unique issues the company may face in the recognition of revenue and expenses. [5 points]

*Apple should recognize upfront a percentage of the sale, to reflect the proceeds from the sale of the phone and the software included, and defer the rest, to reflect the future upgrades. At the time of sale, it should also recognize the value of the phone as cost of goods sold to achieve matching. The controversial issue is how much of the value of the sale should be recognized now and how much in the future.*

* + - 1. On January 1, 2019, an entity enters into a one-year fixed price contract with a customer to analyse the customer’s historical sale trends. The entity promises to share its findings with the customer each month and to provide the customer with a final report at the end of the contract. The customer promises to pay $10,000 per month. The customer can change the specification of its requirements throughout the contract and has the right to obtain any analysis prepared by the entity. Discuss when the company should recognize revenue along with any unique issues it may face in the recognition of expenses. [5 points]

*Revenue can be recognized over the life of the contract as the company shares its findings with the customer. Conditions for revenue recognition during production are met. Expenses should be accrued and matched with revenue. Note that revenue recognition is independent of the cash received from the client.*

# Part 4: Bonus Question [5 points]

Which NFL American football team does Professor Urcan support?

Hint 1: This team is the most successful franchise in the NFL over the last decade and is often referred to as “The Dynasty.”

Hint 2: The names of the coach and players of this team are mentioned in the multiple choice part of this exam.

Hint 3: No, it is definitely not Steelers ☺

Hint 4: If you answer Steelers, I will deduct 10 points ☺

*New England Patriots*