



IMA's Certification for
Accountants and
Financial Professionals
in Business

CMA Handbook

Your Guide to Information and Requirements for CMA Certification



Welcome to the CMA Program!

The Institute of Management Accountants is dedicated to excellence within the management accounting profession. The Certified Management Accountant (CMA®) designation was developed in 1972 to provide an objective measure of an individual's knowledge and competence in the field of management accounting. Only the CMA program recognizes the unique proficiencies required for success in this challenging profession.

The Institute of Certified Management Accountants (ICMA®) regularly reviews the content of the Certified Management Accountant (CMA®) exam to ensure that current topics are appropriately updated and relevant to business practice. Connectivity of a practical Body of Knowledge to the workplace is important. The CMA exam aligns with the knowledge, skills and abilities that an accountant or finance professional in business uses on the job today – financial planning, analysis, control, and decision support. These skills are critical to the success of finance teams.

The CMA program has been designed to meet the evolving needs of business – today and tomorrow. We look forward to helping you achieve excellence as a professional. Certification will confirm your proficiency in your chosen field and your dedication to personal and professional growth.

If you have any questions, please contact us at:

1-800-638-4427 or 201-573-9000

Fax: 201-474-1606

E-mail: IMA@imanet.org

© Copyright 2019

By Institute of Certified Management Accountants

Table of Contents

Introduction, Board of Regents Staff	page 3
Eligibility Criteria, CMA Entrance Fee	page 3
Education Qualification	page 4
Experience Qualification	page 5
CMA Examination	page 5
Standard Setting, Exam Equating, and Scales Scores	page 6
Performance Report	page 7
Content Specification Overview Part 1	page 8
Content Specification Overview Part 2	page 9
Suggested Reading List	page 10
CMA Exam Ratio Definitions	page 13
Exam Test Taking Strategies	page 16
Candidate Resources	page 19
Exam Sites and Sample Screen Layout	page 19
Changes in GAAP/IFRS Policy	page 23
Examination Administration	page 23
Scheduling, Rescheduling or Cancellation of an Appointment	page 23
Refund Policy	page 24
Identification Requirements and Calculator Policy	page 24
The Day of the Exam, and Examinee Conduct	page 25
Candidate Conduct	page 26
Candidate Confidentiality, ADA Compliance, and Exam Awards	page 26
Continuing Education Requirements	page 26
Rights & Responsibilities	page 27
Ethics	page 28

Introduction

The purpose of this handbook is to provide information on the requirements for CMA certification, including registration procedures, scheduling exams, and the examination process itself. The handbook also includes an overview of the CMA exam content and IMA's Statement of Ethical Professional Practice. Candidates should familiarize themselves with the information in this handbook. As the information in this handbook is subject to change we urge candidates to consult online version regularly.

Board of Regents and Staff

The Board of Regents of the Institute of Certified Management Accountants (ICMA®) has overall responsibility for evaluating and validating CMA applicants' credentials; developing, administering, and grading the CMA examinations; and administering the continuing education requirements for participants. The Board consists of between fifteen and nineteen Regents who are appointed to serve three-year terms. Members of the Board are practitioners and educators in the field of management accounting and financial management.

The ICMA was created for the purpose of developing and administering the CMA program. The ICMA staff consists of CMAs and administrative personnel who are responsible for implementing the overall responsibilities of the Board of Regents.

Eligibility Criteria

To be eligible for CMA certification, you must fulfill all of the following requirements:

1. Active membership in the Institute of Management Accountants
2. Pay the CMA Entrance Fee
3. Satisfy the Education Qualification
4. Satisfy the Experience Qualification
5. Complete all required examination parts
6. Comply with the IMA Statement of Ethical Professional Practice

CMA Entrance Fee

The CMA entrance fee for the certification program must be paid before taking the examinations. Candidates must complete the CMA program within three years from the date of entry into the program. If both exam parts are not successfully completed within three years of entering the certification program, any passed part will expire and the CMA entrance fee will have to be repaid.

The CMA Entrance Fee includes:

1. Access to the CMA Support Package beginning on the date of entry into the CMA program*
2. Performance feedback reports
3. Review of educational and experience credentials
4. Personalized, numbered certificate upon completion of all requirements
5. Employer notification of achievement if desired
6. Maintenance of a listing of all CMAs in good standing on the IMA website for employer verification of status

*Please note, the exam support package is not sufficient to prepare for the CMA exam and should be supplemented with a formal plan of study.

Education Qualification

To become a certified CMA, candidates must satisfy one of the following education requirements and submit verification of education to ICMA within seven years of completing the CMA examination.

- **Bachelor's Degree from an accredited college or university.**
 - A partial listing of accredited International and US institutions is available at: <http://univ.cc/world.php>.
 - Degrees that are not accredited must be evaluated by an independent agency. A listing of these agencies can be found at www.aice-eval.org or <http://www.naces.org/members.htm>.
 - If you cannot locate your college or university on the accredited listing, please contact us at ima@imanet.org.
 - Verification: All transcripts should be mailed directly from your college or university to the address below. If you cannot submit your transcripts, please mail us a notarized copy.
- **Professional Certifications**
 - A listing of approved certifications can be found [here](#).
 - Verification: An official letter from approved certifying organization confirming you are a qualified member should be mailed directly from the certifying organization to the address below.

All education verification needs to be submitted in English. Please include your IMA member number.

Transcripts and/or letters should be mailed to:

ICMA
10 Paragon Drive
Suite 1
Montvale, NJ 07645

Experience Qualification

Candidates for the CMA Certification must complete two continuous years of professional experience in management accounting and/or financial management. This requirement may be completed prior to or within seven years of passing the examination. Teaching qualifies as related professional experience when it is full-time and at least 60% of the course load taught is accounting or finance above the principles level over a two-year period. Professional experience is expected to be gained in full-time employment. However, continuous part-time positions of 20 hours per week meeting the definition of qualified experience will count toward this requirement at a rate of one year of experience for every two years of part-time employment.

Qualifying experience consists of positions requiring judgments regularly made employing the principles of management accounting and financial management. Such employment includes:

- Preparation of financial statements
- Financial planning & analysis
- Monthly, quarterly, and year end close
- Auditing (external or internal)
- Budget preparation & reporting
- Manage general ledger and balance sheets
- Forecasting
- Company investment decision making
- Costing analysis
- Risk evaluation

Employment requiring the occasional application of management accounting principles such as in computer operations, sales and marketing, manufacturing, engineering, personnel, and general management will not satisfy this requirement. Internships and trainee, clerical, or non-technical positions do not provide appropriate experience to fulfill this requirement.

CMA Examination

Candidates for CMA certification must complete all required examination parts.

Part 1: Financial Reporting, Planning, Performance, and Control (4 hours – 100 multiple-choice questions and two 30-minute essay questions)

Part 2: Financial Decision Making (4 hours – 100 multiple-choice questions and two 30-minute essay questions)

Each exam part will consist of 100 multiple choice questions and two 30-minute essay questions. You will have 3 hours to complete the multiple choice section and one hour to complete the essays. The essays will be presented after you have completed the multiple choice section of the exam or after 3 hours, whichever comes first. Once you complete and exit the multiple choice section of the exam, you cannot go back. You must remain in the essay section to complete the exam. The essay section consists of 8-10 written response or calculation questions based on two scenarios, describing a typical business situation.

Note: You must answer at least 50% of the multiple-choice questions correctly to be eligible to take the essay section.

You will not receive immediate pass/fail results because the essay questions will be graded off-line. This is a time consuming and labor intensive process. In order to assure consistency, accuracy, and fairness all papers are graded at the same time. Sample grading is performed first to ensure all alternative solutions have been accounted for. Reviewers check the grading throughout the grading process. Once grading is completed there is an additional review of papers on the borderline of passing. The scores for the multiple choice section will be added to the scores of the essay section for a total weighted score of pass/fail reflected in a scaled score for the entire part. Candidates are not required to “pass” both sections; the total score determines pass/fail status. Exam results will be emailed and posted to your online profile approximately six weeks from the end of the month in which you tested.

Standard Setting, Exam Equating, and Scaled Scores

Standard Setting

As described previously, the CMA examinations are criterion-referenced tests, meaning that they are used to determine whether a candidate meets a certain threshold or standard of performance. Accordingly, the ICMA uses an accepted procedure designed for the purpose of determining the level of performance on the tests that actually constitutes passing. This procedure involves the collective judgment of a panel of subject matter experts within the fields of management accounting and financial management. Separate passing scores are established for all parts of the exams, and all pass/fail determinations are final.

Equating

Since the actual items on the CMA exams are different from test form to test form, the different forms of the exam will vary in difficulty, in that some forms may contain somewhat more difficult questions than others. The same standard for passing the test is applied to all candidates, regardless of which form of the test they take. Thus, in order to maintain consistency in standards, the ICMA uses techniques of statistical equating to determine the equivalency of exams. The purpose of equating is to ensure that the passing scores on all forms of the exams are equivalent in terms of levels of difficulty. In this way, the same standard is maintained for all candidates, regardless of when and which test form they take.

Scaled Scores

All scores on the CMA exams are expressed as scaled scores, ranging from 0 to 500, with the passing score set at 360. The raw scores on the test (i.e., the number of items correct) are transformed to this scale for the purpose of maintaining uniformity and consistency in the way scores are reported, regardless of which test forms a candidate may take.

Performance Report

Performance Reports are sent via email from Prometric to candidates who fail an exam part. Performance reports are emailed approximately 14 days after exam results are posted to the candidates' profile. Performance reports show the candidate's performance as satisfactory, marginal or unsatisfactory for each of the key topic areas from the multiple choice section of the exam as well as the overall performance on the essay section of the exam.

Please Note: You cannot take an exam part more than one time during a testing window.

CMA CURRICULUM AND FORMAT

CONTENT SPECIFICATION OVERVIEW

(Effective January 1, 2015)

The percentages below show the relative weight range given to each topic in each part. The level designations indicate the depth and breadth of topic coverage in each part. A detailed content specification outline can be downloaded from our website in the certification section.

Part 1

Financial Reporting, Planning, Performance, and Control

A. External Financial Reporting Decisions

(15%) (Level C)

Preparation of financial statements: balance sheet, income statement, statement of changes in equity, statement of cash flows; valuation of assets and liabilities; operating and capital leases; impact of equity transactions; revenue recognition; income measurement; major differences between U.S. GAAP and IFRS.

B. Planning, Budgeting and Forecasting

(30%) (Level C)

Strategic planning process; budgeting concepts; annual profit plans and supporting schedules; types of budgets, including activity-based budgeting, project budgeting, flexible budgeting; top-level planning and analysis; and forecasting, including quantitative methods such as regression and learning curve analysis.

C. Performance Management

(20%) (Level C)

Factors to be analyzed for control and performance evaluation including revenues, costs, profits, and investment in assets; variance analysis based on flexible budgets and standard costs; responsibility accounting for revenue, cost, contribution and profit centers; key performance indicators; and balanced scorecard.

D. Cost Management

(20%) (Level C)

Cost concepts, flows and terminology; alternative cost objectives; cost measurement concepts; cost accumulation systems including job order costing, process costing, and activity-based costing; overhead cost allocation; supply chain management and business process performance topics such as lean manufacturing, ERP, theory of constraints, value chain analysis, ABM, continuous improvement and efficient accounting processes.

E. Internal Controls

(15%) (Level C)

Corporate governance; internal control risk; internal control environment, procedures, and standards; responsibility and authority for internal auditing; types of audits; assessing the adequacy of the accounting information system controls; and business continuity planning.

Part 2
Financial Decision Making

A. Financial Statement Analysis

(25%) (Level C)

Calculation and interpretation of financial ratios; evaluate performance utilizing multiple ratios; market value vs. book value; profitability analysis; analytical issues including impact of foreign operations, effects of changing prices and inflation, off- balance sheet financing, and earnings quality.

B. Corporate Finance

(20%) (Level C)

Types of risk; including credit, foreign exchange, interest rate, market, and political risk; capital instruments for long-term financing; initial and secondary public offerings; dividend policy; cost of capital; working capital management; raising capital; managing and financing working capital; mergers and acquisitions; and international finance.

C. Decision Analysis

(20%) (Level C)

Relevant data concepts; cost-volume-profit analysis; marginal analysis; make vs. buy decisions; income tax implications for operational decision analysis; pricing methodologies including market comparable, cost-based and value-based approaches.

D. Risk Management

(10%) (Level C)

Types of risk including business, hazard, financial, operational, strategic, legal compliance and political risk; risk mitigation; risk management; risk analysis; and ERM.

E. Investment Decisions

(15%) (Level C)

Cash flow estimates; discounted cash flow concepts; net present value; internal rate of return, discounted payback; payback; income tax implications for investment decisions; risk analysis; and real options.

F. Professional Ethics

(10%) (Level C)

Ethical considerations for management accounting professionals and for the organization.

A detailed content spec is available from the ICMA or it can be downloaded from on our website <http://www.imanet.org/cma-certification/taking-the-exam>

Suggested Reading List

PART 1: Financial Reporting, Planning, Performance, and Control

External Financial Reporting Decisions

Kieso, Donald E., Weygandt, Jerry J., and Warfield, Terry D., *Intermediate Accounting*, 16th edition, Wiley & Sons, Hoboken, NJ, 2016.

Nikolai, Loren A., Bazley John D., and Jones, Jefferson P., *Intermediate Accounting*, 11th edition, South-Western Cengage Learning, Mason, OH, 2010.

Hoyle, Joe B., Schaefer Thomas F., and Douppnik Timothy S., *Advanced Accounting*, 13th edition, McGraw Hill, New York, NY, 2016.

Planning, Budgeting and Forecasting

Wheelen, Thomas L., et. al., *Strategic Management and Business Policy: Globalization , Innovation and Sustainability*, 15th edition, Prentice Hall, Upper Saddle River, NJ, 2018.

Blocher, Edward, J., Stout, David E., Juras, Paul E., and Smith, Steven D., *Cost Management: A Strategic Emphasis*, 8th edition, McGraw Hill, New York, NY, 2018.

Datar, Srikant M., and Rajan, Madhav V., *Horngren's Cost Accounting: A Managerial Emphasis*, 16th edition, Prentice-Hall, Upper Saddle River, NJ, 2017.

Anderson, David, R., Sweeney, Dennis J., Williams, Thomas A., Camm, Jeff, and Cochran, James J., *Quantitative Methods for Business, 13th Edition*, Mason, Ohio: South Western, 2015.

McNair-Connolly, C.J., Merchant, Kenneth A., *Management Accounting: An Integrative Approach*, IMA, Montvale, NJ 2017

Performance Management

Blocher, Edward, J., Stout, David E., Juras, Paul E., and Cokins, Gary, *Cost Management: A Strategic Emphasis*, 8th edition, McGraw Hill, New York, NY, 2013.

Datar, Srikant M., and Rajan, Madhav V., *Horngren's Cost Accounting: A Managerial Emphasis*, 16th edition, Prentice-Hall, Upper Saddle River, NJ, 2017.

McNair-Connolly, C.J., Merchant, Kenneth A., *Management Accounting: An Integrative Approach*, IMA, Montvale, NJ 2017

Cost Management

Blocher, Edward, J., Stout, David E., Juras, Paul E., and Cokins, Gary, *Cost Management: A Strategic Emphasis*, 8th edition, McGraw Hill, New York, NY, 2013.

Datar, Srikant M., and Rajan, Madhav V., *Horngren's Cost Accounting: A Managerial Emphasis*, 16th edition, Prentice-Hall, Upper Saddle River, NJ, 2017.

McNair-Connolly, C.J., Merchant, Kenneth A., *Management Accounting: An Integrative Approach*, IMA, Montvale, NJ 2017

Internal Controls

Simkin, Mark G., Worrell, James L., Savage, Arline A., *Core Concepts of Accounting Information Systems*, 14th edition, John Wiley & Sons, Hoboken, NJ, 2018.

Romney, Marshall B., and Steinbart, Paul J., *Accounting Information Systems*, 14th edition, Pearson Education, New York, NY, 2018.

Adams, Pat, Cutler, Sally, McCuaig, Bruce, Rai, Sajay, Roth, James, *Sawyer's Guide for Internal Auditors*, 6th edition, The Institute of Internal Auditors Research Foundation (IIARF), Altamonte Springs, FL, 2012.

Part 2: Financial Decision Making

Financial Statement Analysis

PKF International Ltd, *2018 Interpretation and Application of International Financial Reporting Standards*, John Wiley & Sons, Hoboken, NJ, 2018.

Gibson, Charles H., *Financial Reporting & Analysis*, 13th edition, South-Western Cengage Learning, Mason, OH, 2012.

Subramanyam, K.R., *Financial Statement Analysis*, 11th edition, McGraw Hill, New York, NY, 2013.

Corporate Finance

Brealey, Richard, A., Myers, Stewart C., and Allen, Franklin, *Principles of Corporate Finance*, 12th edition, McGraw Hill, New York, NY, 2016.

Van Horn, James, C., and Wachowicz, John M. Jr., *Fundamentals of Financial Management*, 13th edition, FT / Prentice Hall, Harlow, England, 2010.

Decision Analysis

Blocher, Edward, J., Stout, David E., Juras, Paul E., and Cokins, Gary, *Cost Management: A Strategic Emphasis*, 8th edition, McGraw Hill, New York, NY, 2019.

Datar, Srikant M., and Rajan, Madhav V., *Horngren's Cost Accounting: A Managerial Emphasis*, 16th edition, Prentice-Hall, Upper Saddle River, NJ, 2017.

Risk Management

COSO, The Committee of Sponsoring Organizations of the Treadway Commission, 2017. *Enterprise Risk Management – Integrated Framework*.

IMA, 2018, *Enterprise Risk Management: Frameworks, Elements, and Integration*, <https://www.imanet.org/insights-and-trends/risk--management/enterprise-risk-management-frameworks-elements-and-integration?ssopc=1>

IMA, 2018, *Enterprise Risk Management: Tools and Techniques for Effective Implementation*, <https://www.imanet.org/insights-and-trends/risk--management/enterprise-risk-management-tools-and-techniques-for-effective-implementation?ssopc=1>

Investment Decisions

Brealey, Richard, A., Myers, Stewart C., and Allen, Franklin, *Principles of Corporate Finance*, 12th edition, McGraw Hill, New York, NY, 2017.

Van Horn, James, C., and Wachowicz, John M. Jr., *Fundamentals of Financial Management*, 13th edition, FT / Prentice Hall, Harlow, England, 2009.

Professional Ethics

IMA, 2017, *IMA Statement of Ethical Professional Practice*, <http://www.imanet.org/insights-and-trends/business-leadership-and-ethics/ima-statement-of-ethical-professional-practice>.

Association of Certified Fraud Examiners, *The Fraud Triangle*, <http://www.acfe.com/content.aspx?id=6939>

IMA, 2014, *Values and Ethics: From Inception to Practice* <http://www.imanet.org/insights-and-trends/business-leadership-and-ethics/values-and-ethics---from-inception-to-practice>

United States Department of Justice, 2012, *A Resource Guide to the U.S. Foreign Corrupt Practices Act*, <https://www.justice.gov/sites/default/files/criminal-fraud/legacy/2015/01/16/guide.pdf>

CMA EXAM
RATIO DEFINITIONS

Abbreviations

EBIT = Earnings before interest and taxes

EBITDA = Earnings before interest, taxes, depreciation and amortization

EBT = Earnings before taxes

EPS = Earnings per share

ROA = Return on assets

ROE = Return on equity

Part 1 Financial Reporting, Planning, Performance, and Control
Section C Performance Management

Section C.3 Performance measures

e*. $ROI = \text{Income of business unit} / \text{Assets of business unit}$

g. $\text{Residual Income (RI)} = \text{Income of business unit} - (\text{Assets of business unit} \times \text{required rate of return})$

Note: "Income" means operating income unless otherwise noted

Part 2 Financial Decision Making
Section A Financial Statement Analysis

Section A.1 Basic Financial Statement Analysis

- a. Common size statement = line items on income statement and statement of cash flows presented as a percent of sales; line items on balance sheet presented as a percent of total assets
- b. Common base year statements = $(\text{new line item amount} / \text{base year line item amount}) \times 100$
- c. Annual growth rate of line items = $(\text{new line item amount} / \text{old line item amount}) - 1$

Section A.2 Financial Ratios

Unless otherwise indicated, end of year data is used for balance sheet items; full year data is used for income statement and statement of cash flow items.

Liquidity

a(1) $\text{Current ratio} = \text{current assets} / \text{current liabilities}$

a(2) $\text{Quick ratio or acid test ratio} = (\text{cash} + \text{marketable securities} + \text{accounts receivable}) / \text{current liabilities}$

a(3) $\text{Cash ratio} = (\text{cash} + \text{marketable securities}) / \text{current liabilities}$

a(4) $\text{Cash flow ratio} = \text{operating cash flow} / \text{current liabilities}$

a(5) Net working capital ratio = net working capital / total assets

Leverage

f(1) Degree of financial leverage = % change in net income / % change in EBIT, or = EBIT / EBT

f(2) Degree of operating leverage = % change in EBIT / % change in sales, or = contribution margin / EBIT

h. Financial leverage ratio = assets / equity

i(1) Debt to equity ratio = total debt / equity

i(2) Long-term debt to equity ratio = (total debt – current liabilities) / equity

i(3) Debt to total assets ratio = total debt / total assets

j(1) Fixed charge coverage = earnings before fixed charges and taxes / fixed charges
fixed charges include interest, required principal repayment, and leases

j(2) Interest coverage (times interest earned) = EBIT / interest expense

j(3) Cash flow to fixed charges = (cash from operations + fixed charges + tax payments) / fixed charges. Note: cash from operations is after-tax.

Activity

l(1) Accounts receivable turnover = credit sales / average gross accounts receivables

l(2) Inventory turnover = cost of goods sold / average inventory

l(3) Accounts payable turnover = credit purchases / average accounts payable

m(1) Days sales in receivables = average accounts receivable / (credit sales / 365), or = 365 / accounts receivable turnover

m(2) Days sales in inventory = average inventory / (cost of sales / 365), or = 365 / inventory turnover

m(3) Days purchases in payables = average payables / (purchase / 365), or = 365 / payables turnover

n(1) Operating cycle = days sales in receivables + days sales in inventory

n(2) Cash cycle = Operating cycle – days purchases in payables

o(1) Total asset turnover = sales / average total assets

o(2) Fixed asset turnover = sales / average net plant, property and equipment

Profitability

p(1) Gross profit margin percentage = gross profit / sales

p(2) Operating profit margin percentage = operating income / sales

p(3) Net profit margin percentage = net income / sales

p(4) EBITDA margin = EBITDA / sales

- q(1) $ROA = \text{net income} / \text{average total assets}$
- q(2) $ROE = \text{net income} / \text{average equity}$

Market

- r(1) $\text{Market-to-book ratio} = \text{current stock price} / \text{book value per share}$
- r(2) $\text{Price earnings ratio} = \text{market price per share} / \text{EPS}$
- r(3) $\text{Price to EBITDA ratio} = \text{market price per share} / \text{EBITDA per share}$

- s. $\text{Book value per share} = (\text{total stockholders' equity} - \text{preferred equity}) / \text{number of common shares outstanding}$

- u(1) $\text{Basic EPS} = (\text{net income} - \text{preferred dividends}) / \text{weighted average common shares outstanding}$
(Number of shares outstanding is weighted by the number of months shares are outstanding)
- u(2) $\text{Diluted EPS} = (\text{net income} - \text{preferred dividends}) / \text{diluted weighted average common shares outstanding}$
(Diluted EPS adjusts common shares by adding shares that may be issued for convertible securities and options)

- v(1) $\text{Earnings yield} = \text{EPS} / \text{current market price per common share}$
- v(2) $\text{Dividend yield} = \text{annual dividends per share} / \text{market price per share}$
- v(3) $\text{Dividend payout ratio} = \text{common dividend} / \text{earnings available to common shareholders}$
- v(4) $\text{Shareholder return} = (\text{ending stock price} - \text{beginning stock price} + \text{annual dividends per share}) / \text{beginning stock price}$

Section A.3 Profitability Analysis

- a(1) $ROA = \text{Net profit margin} \times \text{total asset turnover}; (\text{net income} / \text{sales}) \times (\text{sales} / \text{average total assets}) = \text{net income} / \text{average total assets}$
- b(2) $ROE = ROA \times \text{financial leverage}; (\text{net income} / \text{average total assets}) \times (\text{average total assets} / \text{average equity}) = \text{net income} / \text{average equity}$

- g(1) $\text{Operating profit margin percentage} = \text{operating income} / \text{sales}$
- g(2) $\text{Net profit margin percentage} = \text{net income} / \text{sales}$

- j. $\text{Sustainable growth rate} = (1 - \text{dividend payout ratio}) \times ROE$

Section B Corporate Finance

Section B.4 Working capital management

- b. $\text{Net working capital} = \text{current assets} - \text{current liabilities}$

Section C Decision Analysis

Section C.1 Cost/volume/profit analysis

- f(1) Breakeven point in units = fixed costs / unit contribution margin
- f(2) Breakeven point in dollars = fixed costs / (unit contribution margin / selling price)

- i(1) Margin of safety = planned sales – breakeven sales
- i(2) Margin of safety ratio = margin of safety / planned sales

Section C.3 Pricing

- n. Elasticity is calculated using the midpoint formula. For price elasticity of demand $E = [\text{change in quantity} / (\text{average of quantities})] / [\text{change in price} / (\text{average of prices})]$

Exam Test Taking Strategies

The best preparation you can make for taking the exam is thoroughly studying the material and content covered by the examination. Beyond that, however, there are several strategies you can use while taking the test that will help to maximize your performance.

1. Answer the questions that you know first.

Try to avoid dwelling on any particular question(s) for extended periods of time. This will give you the opportunity to answer all of the questions you may know and also allow you to see how much time you have to devote to the questions that are more difficult for you.

2. Mark the difficult questions for later review.

You should approach the test with the expectation that you will encounter at least some questions that you cannot immediately answer. Keep in mind that each question is worth the same number of points (i.e., 1 for correct and 0 for incorrect), regardless of its difficulty. Do not agonize over any particular question, but mark those questions you are unsure of so that you can readily locate them when you are ready to look at them a second time.

3. Read each question carefully, noting any key words.

Pay close attention to the wording of the question. Words such as except, least, and most in a question will have a significant bearing on the correct answer. Think each question through very carefully before answering. You may want to jot down key words that appear in the question, or to rephrase the question in your own words if you are having trouble understanding it.

4. Try to answer the question in your mind before actually looking at the options.

Then see if the answer you formulated exists among the options. Doing this could serve as a sort of verification of the correct answer. You should still carefully review the other options as well, to be certain there isn't a more appropriate answer than the one you selected.

5. If you are uncertain about an answer, try to make an educated guess.

You are likely to know something about the topic presented in the question and are, therefore, often able to eliminate at least one incorrect option. If you come across an item for which you truly do not know the answer, try to eliminate those options that you deem likely to be incorrect. This will increase your chances of selecting the correct answer.

6. Answer ALL of the questions.

The CMA exams do not employ a penalty for incorrect answers. Points are not deducted from your score for an incorrect answer. There is nothing to gain by leaving questions unanswered; therefore, answer all questions on the exam.

7. Keep scratch paper organized.

You will be given a booklet similar to a college “bluebook,” to be used as scratch paper for doing calculations or other notes. Label these notes clearly, and show your work clearly. The scratch paper booklet is turned in at the end, and is not used in scoring your exam. However, when you go back to review your work, it is much easier and quicker if you do it neatly.

8. Keep track of time

When taking the multiple-choice test, plan the amount of time given vs. the number of questions that will be presented. Watch the time you invest in each question—don’t get stuck for too long on one question. Keep moving through the questions.

9. Use the full time allotted to you.

In a similar vein, there is no advantage in ending the test early. Make the most of any remaining time you may have by reviewing your work, making corrections, or going back to more difficult questions. It is possible that during such review time, you will recall some fact or information which you may have previously overlooked on one or more questions. Though it may seem like a relief to end the test early, bear in mind that the allotted time will end soon enough, and you will want to make the most of the few minutes you have remaining to you to help maximize your score.

Answer Changing

One of the great myths about taking tests is that one should not change one’s answer on an objective examination, because the first answer is usually the right one. The admonition to stay with your original answer because your first instinct is likely to be correct is actually incorrect. Numerous studies of testing have shown that, on average, when candidates change their responses to a test question, about 55% of the time the change is made from a wrong answer to a right one, thereby resulting in an increased score. Another 23% of the time, examinees will change their responses from a wrong answer to another wrong answer, resulting in no change to their scores. Only about 20% of the time will candidates change from a right answer to a wrong answer. Therefore, if you have good reason to believe that a change to your answer is warranted, making such a change will more often than not lead to either an increase or at the very worst no change to your total score. The chances of negatively impacting your total score by making such changes are only likely to be one in five.

Test Anxiety

Test anxiety is natural and is likely to be experienced by most examinees to some degree. Some examinees are able to channel their anxiety in a positive way; others have more difficulty managing their anxiety. Test anxiety can result in mental distractions, mental blocks, and physical symptoms of anxiety that may affect your performance on the exam.

You can reduce your anxiety by recognizing some of the factors that contribute to it. For instance, test-anxious examinees often lose perspective on the situation by seeing the test as a final or one-time opportunity, which it rarely is—make an effort to remind yourself of this when taking the exam. If you draw a “blank” during the exam, do not panic, since such an occurrence is quite normal. Return to the question at a later time or take a few moments to relax until it comes back to you. Try to replace any self-defeating thoughts like “I haven’t studied enough” or “I don’t know the material” with more positive internal messages. The chances are you will know more about the material than you think. Finally, effective study and preparation is a strong, if not the strongest, approach for enhancing self-confidence and reducing nervousness. You should also take advantage of any available exam preparation materials and opportunities, and seek any guidance on ways to enhance your study skills.

How to Write Essay Questions for the Part 1 and Part 2 Exams

The CMA Part 1 and 2 essay questions require you to prepare analyses, discuss the main points of a specific topic, and then examine the implications. These essay questions require you to support your answers with calculations and explanations in order to demonstrate your knowledge and comprehension of a topic, and your ability to apply that knowledge to the situation presented in the scenario.

You will be expected to present written answers and calculations that are responsive to the questions asked, that are presented in a logical manner, and that demonstrate an appropriate understanding of the subject matter. Clues within the questions themselves can be used to help you formulate and organize your responses. Verbs such as *calculate*, *analyze*, *apply*, *explore*, *interpret*, and *examine* can help determine the requirements of the question. Using the same verbs within your answer will help ensure that you are responding directly and completely to the specific questions being asked.

It should be noted that candidates are expected to have a working knowledge of using word processing and electronic spreadsheets. Candidates are also expected to have an understanding of basic financial statements, time value of money concepts, and elementary statistics.

Essay Test Taking Tips

You will be given one hour to complete the essay portion of the Part 1 and 2 exams. To make the best use of your time:

Keep track of time as you work through the scenarios. Do not spend too much time on any one question. Note that the points for each scenario are proportional to the suggested time shown for that scenario.

1. Begin by writing key words, thoughts, facts, figures, and anything else that can be used to answer the question.

2. Read the entire question for requirements. Note that you may have more than one task— for example, define ABC and interpret its applicability to XYZ.
3. Begin your answer with one or two sentences that directly answer the question.
4. Make it as easy as possible for graders to give you points. The goal in grading is to award you points, so show your thinking clearly and effectively, detailing any calculations. You can only receive the maximum points the question is worth. Therefore, it is possible to achieve a good score even if you have an incorrect calculation provided you have shown enough other information that the grader can award points for.
5. Proofread your answer for logic, thoroughness, and clarity. It is very important to make sure that the grader will be able to easily follow your thinking and understand your answer.
6. Do not leave a question blank. If you do not have enough time to write a full response, write an outline of your main points to show what you know in order to get partial credit.
7. Use cut/paste or copy/paste functions only within a single question. These functions do not work across questions and can lead to data being lost. If you find your answer to Question 1 also answers Question 2, write “see my answer to Question 1”.

Candidate Resources

MyIMA Network is IMA’s online social network exclusively for IMA members. Within the community you will be able to join groups based on topic areas, industries, Chapters & Councils, CMA Study Groups, or start your own group based on your area of interest. Each group’s section offers its members the opportunity to post announcements and local events, participate in a forum and access a shared workspace for members to use as they wish. All members can share ideas in the myIMA Network Forums section, visit IMA’s Job Connections page, or view IMA’s national and international Events calendar. Plus, IMA’s searchable Library includes a variety of IMA resources and those added by members.

Exam Sites and Sample Screen Layout

Another possible source of anxiety is not knowing what to expect at the exam site. The ICMA uses Prometric to administer the exams. Prometric has an extensive network of U.S. and international testing centers. See this link <http://www.prometric.com/ICMA/default.htm> for locations.

These Prometric Testing Centers (PTCs) are permanent computer-equipped testing facilities with testing hours available daily (except holidays and Sundays in certain locations) in the U.S. Internationally, testing times are set in accordance with local laws and customs. All U.S. PTCs are handicapped accessible and conform with the Americans with Disabilities Act (ADA). The PTCs offer private, modular testing booths with ample workspace, comfortable seating, proper lighting, and ventilation. The computer workstations employ state-of-the-art technology with high-clarity screen displays to minimize eye-strain. Candidates may use either a computer keyboard or a mouse to enter test answers. On request, candidates will be provided with scrap paper and pencils for use in making calculations. If additional booklets are needed, you would need to raise your hand and request it. The scrap paper is counted by the test center personnel and all

paper is collected at the end of the exam. Candidates are allowed to bring a small battery or solar powered electronic calculators restricted to a maximum of six functions –addition, subtraction, multiplication, division, square root, and percentage are allowed. The calculator must not be programmable and must not use any type of tape. Candidates can also use the Texas Instrument’s BA II Plus, HP 12c, or HP 12c Platinum calculators when taking the exams. The Hewlett- Packard 10BII is valid, but no longer to purchase. Candidates will not be allowed to use calculators that do not comply with these restrictions.

Candidates are not permitted to bring personal belongings, such as purses, briefcases, and jackets, into the testing room. Small lockers are available at the test centers for storage of personal belongings.

At the start of the test, you will be taken through a short tutorial that introduces the testing screens and shows you how to select answers and mark questions for review. The tutorial can be repeated if you wish; however, total tutorial time is limited to 15 minutes. Following the tutorial, the exam begins. The time remaining to complete the exam is displayed in the upper right corner of the screen. The tutorial does not affect the three hours allowed for the exam part being taken. A sample screen layout for the multiple choice sections of CMA parts 1 and 2 is provided on the next page. This screen layout shows the time display; the next and previous selections, which take you to the next or previous page; the selection to mark a question for review; and the selection to review marked items.

The CMA written-response questions will be delivered via computer at Prometric Testing Centers in the same manner as the other exam parts. For these questions, you will have a text box in which to type your response.

CMA Multiple Choice sample screen shot

Question 92 of 100

Test Taker
Part 2 Financial Decision Making

Time Remaining: 02:55:04

On January 1, Rosewater Company leased a computer for four years at a monthly rent of €80, payable at the end of each month. Due to the rate of technological change, the computer is expected to become obsolete within five years. At the inception of the lease, the computer was retailing for €3,450. If Rosewater had purchased the computer, it could have borrowed the funds at 10%. At a 10% interest rate, the present value of the lease payments is €3,154. Rosewater does not know the rate implicit in the lease. According to IFRS, Rosewater should report (to the closest euro) which one of the following expense charges for the month of January?

- a. Interest expense, €26; depreciation expense, €66.
- b. Interest expense, €0; rent expense, €80.
- c. Interest expense, €29; depreciation expense, €58.
- d. Interest expense, €29; rent expense, €80.

Calculator

Time value Tables

PREVIOUS

NEXT

MARK

REVIEW

CMA Essay sample screen shot

Question 4 of 9

Test Taker
Part 2 Financial Decision Making

Time Remaining: 03:58:24



Technology Inc. makes high-tech components for the automotive industry. They just finished their fiscal year and have paid out a total of \$18,000 in common dividends. The company has an effective income tax rate of 40%. The following selected financial information is from their income statement and balance sheets from the last two years.

- Explain the possible effect that debt has on ROE if Technology Inc. is performing well.
- Identify and explain one advantage and one disadvantage to shareholders of using debt in a firm's capital structure.

	<u>Current Year</u>	
Net sales	\$800,000	
Cost of goods sold	240,000	
Operating expenses	110,000	
Interest expense	20,000	
Earnings before taxes	430,000	
	<u>Current Year</u>	<u>Prior Year</u>
Total assets	\$3,500,000	\$2,900,000
Total liabilities	1,900,000	1,540,000
Common stock	600,000	600,000
Retained earnings	1,000,000	760,000
Total shareholder equity	1,600,000	\$1,360,000

Cut
Copy
Paste
Save

Calculator

Time Value Tables

PREVIOUS

NEXT

MARK

REVIEW

Changes in GAAP/IFRS Policy

Changes in GAAP and/or IFRS are reflected on the CMA exam one year after the effective date.

Examination Administration

The CMA examination is given in a computer-based format, and is offered at Prometric Testing Centers located throughout the world. An up-to-date listing of all Prometric Testing Centers can be found at Prometric's website. www.prometric.com/ICMA.

Parts 1 and 2 are offered during the following three testing windows.

January/February

May/June

September/October

Registrations for Parts 1 and 2 will close on or after the 15th of February, June, and October.

Register for the exam:

1. On-line at the online store.
2. Calling 800-638-4427, or (201) 573-9000 with your credit card information.

Scheduling an Appointment for an Exam

Once you have received authorization from ICMA, it is your responsibility to schedule your appointment at a Prometric Testing Center. Log onto www.prometric.com/ICMA to locate a testing center, schedule, confirm, reschedule, or cancel your appointment 24 hours, 7 days a week. Instructions are provided by ICMA at the time your authorization letter is emailed that provides further options for scheduling. ICMA is not responsible if you delay scheduling and there are no longer appointments available within your authorization period. You will be given a confirmation number at the time you schedule an appointment; you should make a note of this number.

If you do not schedule an appointment or you don't appear for a schedule appointment in the selected testing window, you will forfeit your exam fee.

Rescheduling or Cancellation of a Scheduled Appointment

- If you reschedule or cancel an appointment within 30 days of your appointment date you will be required to pay a rescheduling fee to Prometric.
- You cannot reschedule or cancel your appointment with Prometric within 72 hours of your scheduled appointment. If you cancel in less than 72 hours, you will forfeit your exam fee and will need to purchase a new exam registration.
- Appointments cannot be rescheduled to another testing window.

To cancel or reschedule your appointment online, please have your confirmation number ready and visit www.prometric.com/ICMA. Or you can call 800-479-6370 if you are located in the U.S. or the Regional Registration Contact center if you are located outside the U.S. Both options are available 24 hours, 7 days a week. If you do not comply with the cancellation policy, you will be considered a “no show” and you will need to re-register with ICMA and repay the examination fee.

You must sit for the exam during the testing window which you registered for. We do not move authorizations to another testing window.

Refund Policy

The CMA Entrance Fee is not refundable.

The examination fee is refundable within 30 days from the time you purchased the exam and if no appointment has been set with Prometric. A processing fee will be subtracted from the refund.

Identification Requirements

For admission to a Prometric Test Site, you must present proof of your identity. The name on your ID must match exactly with the name on your authorization letter. Following are the only acceptable forms of valid identification.

1. Valid, signed, non-expired Government-issued passport. Or
2. Two original forms of non-expired identification, one with a photograph, both with your signature. Acceptable forms of ID include a drivers' license, military ID, credit card or bank debit card with photo and signature, bank debit card with signature, or company ID. Or
3. A Government-issued National country ID card with a photograph (with or without a signature), and another acceptable valid form of ID with a signature as defined in #2 above.

You will not be permitted into the examination without proper identification. If you are not granted access to the exam, you will be required to register again for the exam and pay the full fee. Without the above listed identification, you will not be able to test.

Calculator Policy

Small battery or solar powered electronic calculators restricted to a maximum of six functions – addition, subtraction, multiplication, division, square root, and percentage are allowed. The calculator must not be programmable and must not use any type of tape. Candidates can also use the Texas Instrument's BA II Plus, HP 12c, or HP 12c Platinum calculators when taking the exams. The Hewlett- Packard 10BII is valid, but no longer available to purchase. Candidates will not be allowed to use calculators that do not comply with these restrictions.

The Day of the Exam

- Arrive at the Prometric Testing Center 30 minutes before the time of your appointment. If you are more than 15 minutes late for your scheduled appointment, you will lose your scheduled sitting and be required to re-register at full cost.
- You will be required to sign the Prometric Log Book and provide a fingerprint.
- Bring valid forms of Identification.
- Bring an approved calculator.

You may be scanned prior to each entry into the test room to ensure you do not have any prohibited electronic devices. If you decline to be scanned the test center administrator will be required to submit a report to Prometric and the ICMA.

Examinee Conduct

All candidates must agree that they will not disclose the contents of the examinations nor remove examination materials from the testing room.

Cheating will not be tolerated, and all instances of suspected cheating will be fully investigated. Examinees who are caught cheating will have their grades invalidated and will be disqualified from future examinations. In addition, cheating is a violation of IMA's Statement of Ethical Professional Practice, and will result in expulsion from IMA.

Cheating includes, but is not limited to, the following: copying answers from another candidate during the exam, using unauthorized personal items and study materials during the exam, helping another candidate during the exam, removing exam materials from the testing room, and sharing questions that appeared on the exam.

Specific examples of cheating include, but are not limited to, the following:

- Sharing and discussing questions that appeared on the exam on social media forums including, but not limited to, Facebook, LinkedIn, WhatsApp, WeChat, and Snapchat.
- Bringing into the test room unauthorized personal items such as outerwear, hats, food, drinks, purses, briefcases, notebooks, pagers, watches, cell phones, recording devices, and photographic equipment.
- Bringing into the test room unauthorized study material, such as written notes, published materials, and other testing aids in any format.
- Taking photographs of the exam questions during the exam.
- Memorizing exam questions and sharing those questions with any party, including review course providers or other candidates.

The ICMA Board of Regents will make a final determination as to expulsion from the certification program.

For those already certified by ICMA, the subsequent discovery of cheating will be considered a violation of the IMA Statement of Ethical Professional Practice and will result in revocation of the CMA certificate and expulsion from IMA.

Candidate Conduct

All candidates are required to attest to the authenticity of their credentials (i.e., education, certification, and work experience documentation) and the accuracy of all statements made in their application. Falsifying credentials will result in expulsion from the CMA program and IMA.

Candidate Confidentiality

The ICMA makes every effort to maintain candidate confidentiality. Individual score information is not released to third parties without written authorization from the candidate. Candidate participation in the program is kept confidential. A complete listing of all CMAs in good standing is available on the web site for employer verification of status.

ADA Compliance

The Institute of Certified Management Accountants and Prometric Testing Centers are fully compliant with the Americans with Disabilities Act (ADA). Applicants planning to take the examinations who have special needs as covered by the ADA should notify the ICMA at least two months before they plan to take the exams. Applicants are reminded that modifications, accommodations, auxiliary aids and/or services (“accommodations”) can only be offered if they do not fundamentally alter the measurement of the skills or knowledge the examination is intended to test.

Examination Awards

Candidates for the CMA are eligible for examination awards based on the total score of parts 1 and 2. To qualify for an award, you must pass each of the two parts on the first attempt, and complete both parts within two months (January/February, May/June, or September/October).

Continuing Education Requirement

Once you have completed the CMA exam but have not yet been awarded the certificate, you are required to meet the continuing education requirements and maintain membership in the IMA. Certificates will be awarded when the experience requirement is satisfied. At that time continuing education and IMA membership must be current.

You will be required to complete 30 hours of continuing education annually, 2 hours of which must be in the area of Ethics. Credit will be given for subjects relevant to a management accountant’s or financial manager’s career development and related to employer needs. The ICMA grants credit for programs sponsored by education organizations, employers, business organizations, and professional and trade associations. Programs may be in the form of college courses, seminars, workshops, technical meetings, self-study packages, or on-line courses. Further details can be found at: [CPE Rules & Requirements](#).

Rights & Responsibilities of a CMA

The maintenance of your certification is contingent upon fulfillment of the following obligations:

Complete 30 hours of Continuing Professional Education, including 2 hours of ethics

Comply with IMA's Statement of Ethical Professional Practice

Pay the CMA Annual Fee, which covers active membership in IMA and the annual CMA Maintenance Fee.

CMAs are required to comply with all applicable local laws concerning the offering of accounting services to the general public.

IMA STATEMENT OF ETHICAL PROFESSIONAL PRACTICE

Members of IMA shall behave ethically. A commitment to ethical professional practice includes overarching principles that express our values and standards that guide member conduct.

PRINCIPLES

IMA's overarching ethical principles include: Honesty, Fairness, Objectivity, and Responsibility. Members shall act in accordance with these principles and shall encourage others within their organizations to adhere to them.

STANDARDS

IMA members have a responsibility to comply with and uphold the standards of Competence, Confidentiality, Integrity, and Credibility. Failure to comply may result in disciplinary action.

I. COMPETENCE

1. Maintain an appropriate level of professional leadership and expertise by enhancing knowledge and skills.
2. Perform professional duties in accordance with relevant laws, regulations, and technical standards.
3. Provide decision support information and recommendations that are accurate, clear, concise, and timely. Recognize and help manage risk.

II. CONFIDENTIALITY

1. Keep information confidential except when disclosure is authorized or legally required.
2. Inform all relevant parties regarding appropriate use of confidential information. Monitor to ensure compliance.
3. Refrain from using confidential information for unethical or illegal advantage.

III. INTEGRITY

1. Mitigate actual conflicts of interest. Regularly communicate with business associates to avoid apparent conflicts of interest. Advise all parties of any potential conflicts of interest.
2. Refrain from engaging in any conduct that would prejudice carrying out duties ethically.
3. Abstain from engaging in or supporting any activity that might discredit the profession.
4. Contribute to a positive ethical culture and place integrity of the profession above personal interests.

IV. CREDIBILITY

1. Communicate information fairly and objectively.
2. Provide all relevant information that could reasonably be expected to influence an intended user's understanding of the reports, analyses, or recommendations.

3. Report any delays or deficiencies in information, timeliness, processing, or internal controls in conformance with organization policy and/or applicable law.
4. Communicate professional limitations or other constraints that would preclude responsible judgment or successful performance of an activity.

RESOLVING ETHICAL ISSUES

In applying the Standards of Ethical Professional Practice, the member may encounter unethical issues or behavior. In these situations, the member should not ignore them, but rather should actively seek resolution of the issue. In determining which steps to follow, the member should consider all risks involved and whether protections exist against retaliation.

When faced with unethical issues, the member should follow the established policies of his or her organization, including use of an anonymous reporting system if available.

If the organization does not have established policies, the member should consider the following courses of action:

- The resolution process could include a discussion with the member's immediate supervisor. If the supervisor appears to be involved, the issue could be presented to the next level of management.
- IMA offers an anonymous helpline that the member may call to request how key elements of the *IMA Statement of Ethical Professional Practice* could be applied to the ethical issue.
- The member should consider consulting his or her own attorney to learn of any legal obligations, rights, and risks concerning the issue.

If resolution efforts are not successful, the member may wish to consider disassociating from the organization.

IMA Ethics Helpline Number for callers in the U.S. and Canada:

(800) 245-1383

In other countries, dial the AT&T USA Direct Access Number from www.att.com/esupport/traveler.jsp?tab=3, then the above number.