PROBLEMS AND SOLUTIONS

Advanced Management Accounting

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Editorial Board

Problems and Solutions: Advanced Management Accounting has benefited from an extensive development process. Over 30 faculty reviewers, students and industry professionals provided feedback about the accuray and relevance of the content as well as suggestions for its improvements. While we could not incorporate every suggestion from everyone, we do acknowledge that their feedback was invaluable in our attempt at creating the best possible *Problems and Solutions: Advanced Management Accounting* book.

Consultant Board

The consultant board provided us with a detailed and critical analysis of each chapter and worked with us throughout the development of the book. We would like to thank the following for their time and commitment:

Prashant Mishra
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Supplement Authors

This supplement includes introduction to the major concepts of each chapter, definitions and background for each concept, applications of data and analytical problems that can be discussed in the class.

Sanjay Kumar Pandey
Editorial Head, Carvinowledge Press

Student Reviewers

We took the help of many students who class-tesed the manuscript, evaluated it for clarity, and assessed each feature. Their comments helped us expand the book's content, improved the pedagogical features, and strengthened the assessment features. We are thankful to the following:

Gopal Aggarwal **Alok Kumar** **Sachin Goyal** **Rajesh Jha**

Preface

Problems and Solutions: Advanced Management Accounting is a comprehensive book explaining concepts, problems of advanced cost management in a lucid and informative manner. It has been developed exclusively for the students of CA Final (new course). Key features of the textbook are:

- Besides comprehensive coverage of the syllabus of Advanced Management Accounting prescribed by Institute of Chartered Accountants of India, it provides extra inputs to students to give them a cutting edge in examinations.
- Complex concepts have been described in an easy-to-understand manner with simple presentation through charts and illustrations.
- While maintaining a solution and practice oriented approach, the book provides a comprehensive review of practical concepts. Special efforts have been made to maintain an appropriate balance between theoretical concepts and practical questions.
- By exclusively discussing problem solving techniques, the book effectively addresses to the most important query among students pertaining to problem solving.
- Each chapter begins with overview to help students know, at a glance, what they would learn in the chapter.
- Points to Remember incorporated in each chapter recapitulate the concept for revision purposes.

The book is divided into 2 sections, namely:

Section I–Practical Costing

Section I provides practical questions and answers to all cost concepts and applications in conformity with the syllabus of Advanced Management Accounting prescribed by Institute of Chartered Accountants of India.

Section II–Operations Research

Section II covers theories, concepts, applications and numericals related to Operations Research.

Glossary of various costing and OR concepts are given at the end of chapter for quick recap of the important topics discussed throught.

The Author expresses his sincere gratitude to **the Institute of Chartered Accountants of India** for granting permission to use the past examination questions and Revision Test Paper (RTP) Questions.

Valuable suggestions and constructive feedback from learners is welcome and would be gratefully acknowledged.

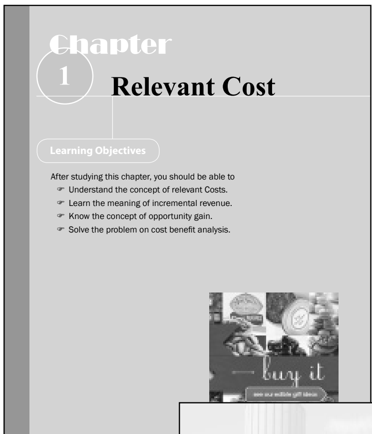
Acknowledgements

I am grateful to my esteemed colleagues, friends and students who have contributed to this book by advising me and by giving constructive feedback. This book would not have taken its present shape without the continuous support and encouragement from the editorial and production team of Carvinowledge Press and it has been a real pleasure working in coordination with their extremely professional set up. I have immensely benefitted from referring to several books and publications. Thus, I owe an enormous intellectual debt to all authors, publications, publishers and institutions whose work I have drawn upon in developing this textbook. I extend my heartfelt gratitude to Aggarwal Law House, which has been a driving force throughout the process of developing this textbook.

I hope that the book serves the purpose of its readers. I retain the responsibility of errors of any kind in the book.

Sanjay Aggarwal

Guided Tour



Chapter

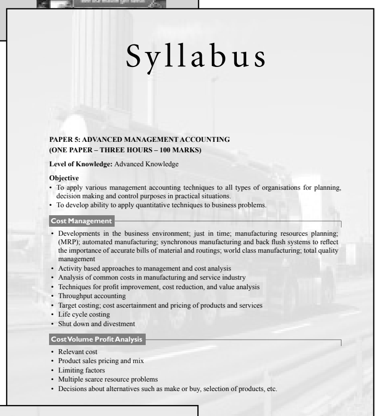
1 Relevant Cost

Learning Objectives

After studying this chapter, you should be able to
- Understand the concept of relevant Costs.
- Learn the meaning of incremental revenue.
- Know the concept of opportunity gain.
- Solve the problem on cost benefit analysis.

LEARNING OBJECTIVES

Each chapter opens with a set of learning objectives, summarizing what readers should learn from each chapter.



Syllabus

PAPER 5: ADVANCED MANAGEMENT ACCOUNTING
(ONE PAPER – THREE HOURS – 100 MARKS)

Level of Knowledge: Advanced Knowledge

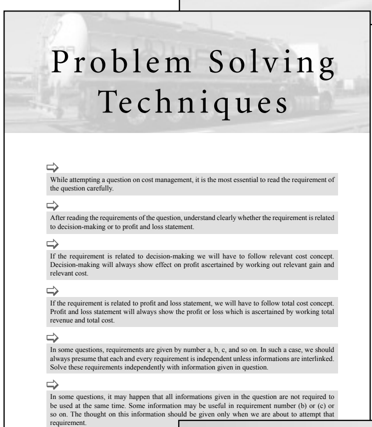
Objective
- To apply various management accounting techniques to all types of organisations for planning, decision making and control purposes in practical situations.
- To develop ability to apply quantitative techniques to business problems.

Cost Management
- Developments in the business environment; just in time; manufacturing resources planning; (MRP); automated manufacturing; synchronous manufacturing and back flush systems to reflect the importance of accurate bills of material and routings; world class manufacturing; total quality management
- Activity based approaches to management and cost analysis
- Analysis of common costs in manufacturing and service industry
- Techniques for profit improvement, cost reduction, and value analysis
- Throughput accounting
- Target costing; cost ascertainment and pricing of products and services
- Life cycle costing
- Shut down and divestment

Cost Volume Profit Analysis
- Relevant cost
- Product sales pricing and mix
- Limiting factors
- Multiple scarce resource problems
- Decisions about alternatives such as make or buy, selection of products, etc.

SYLLABI COVERAGE

The book covers the latest syllabi of Advanced Management Accounting for CA finals as issued by ICAI.

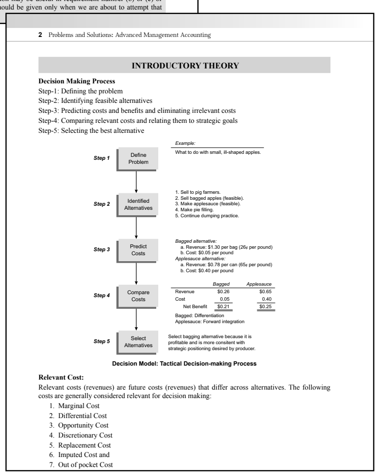


Problem Solving Techniques

- While attempting a question on cost management, it is the most essential to read the requirement of the question carefully.
- After reading the requirements of the question, understand clearly whether the requirement is related to decision-making or to profit and loss statement.
- If the requirement is related to decision-making we will have to follow relevant cost concept. Decision-making will always show effect on profit ascertained by working out relevant gain and relevant cost.
- If the requirement is related to profit and loss statement, we will have to follow total cost concept. Profit and loss statement will always show the profit or loss which is ascertained by working total revenue and total cost.
- In some questions, requirements are given by number a, b, c, and so on. In such a case, we should always presume that each and every requirement is independent unless informations are interlinked. Solve these requirements independently with information given in question.
- In some questions, it may happen that all informations given in the question are not required to be used at the same time. Some information may be useful in requirement number (b) or (c) or so on. The thought on this information should be given only when we are about to attempt that requirement.

PROBLEM SOLVING TECHNIQUES

This section covers the best problem solving techniques for costing and operations research problems. This has been drawn from the wide range of author's experience from industry, academics and teaching CA final students.



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INTRODUCTORY THEORY

Decision Making Process
Step-1: Defining the problem
Step-2: Identifying feasible alternatives
Step-3: Predicting costs and benefits and eliminating irrelevant costs
Step-4: Comparing relevant costs and relating them to strategic goals
Step-5: Selecting the best alternative

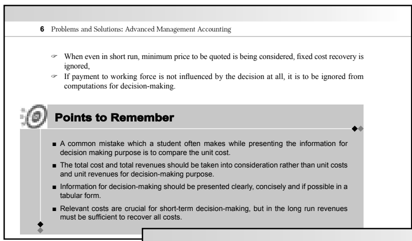
Decision Model: Tactical Decision-making Process

Relevant Cost:
Relevant costs (revenues) are future costs (revenues) that differ across alternatives. The following costs are generally considered relevant for decision making:
1. Marginal Cost
2. Differential Cost
3. Opportunity Cost
4. Discretionary Cost
5. Replacement Cost
6. Imputed Cost and
7. Out of pocket Cost

EXHIBITS

Each chapter includes exhibits, illustrating the concepts you need to know and the techniques you need to learn.

Guided Tour



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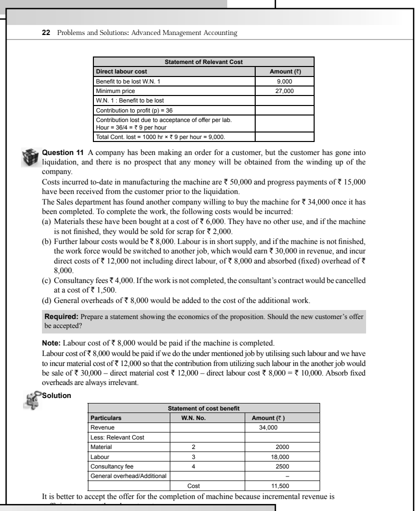
- When even in short run, minimum price to be quoted is being considered, fixed cost recovery is ignored,
- If payment to working force is not influenced by the decision at all, it is to be ignored from computations for decision-making.

Points to Remember

- A common mistake which a student often makes while presenting the information for decision making purpose is to compare the unit cost.
- The total cost and total revenues should be taken into consideration rather than unit costs and unit revenues for decision-making purpose.
- Information for decision-making should be presented clearly, concisely and if possible in a tabular form.
- Relevant costs are crucial for short-term decision-making, but in the long run revenues must be sufficient to recover all costs.

POINTS TO REMEMBER

These concepts in boxes introduce you to the topics to remember, revise, follow and ground the chapter concepts in real life terms. These points have been drawn keeping CA finals questions being asked in examinations.



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Statement of Relevant Cost	
Direct labour cost	Amount (₹)
Benefit to be lost W.N. 1	9,000
Minimum price	27,000
W.N. 1 : Benefit to be lost	
Contribution to profit (p) = 36	
Contribution lost due to acceptance of offer per lab. Hour = 36/4 = ₹ 9 per hour	
Total Cont. lost = 1000 hr × ₹ 9 per hour = 9,000.	

Question 11 A company has been making an order for a customer, but the customer has gone into liquidation, and there is no prospect that any money will be obtained from the winding up of the company.
Costs incurred to-date in manufacturing the machine are ₹ 50,000 and progress payments of ₹ 15,000 have been received from the customer prior to the liquidation.
The Sales department has found another company willing to buy the machine for ₹ 34,000 once it has been completed. To complete the work, the following costs would be incurred:
(a) Materials these have been bought at a cost of ₹ 6,000. They have no other use, and if the machine is not finished, they would be sold for scrap for ₹ 2,000.
(b) Further labour costs would be ₹ 8,000. Labour is in short supply, and if the machine is not finished, the work force would be switched to another job, which would earn ₹ 30,000 in revenue, and incur direct costs of ₹ 12,000 not including direct labour, of ₹ 8,000 and absorbed (fixed) overhead of ₹ 8,000.
(c) Consultancy fees ₹ 4,000. If the work is not completed, the consultant's contract would be cancelled at a cost of ₹ 1,500.
(d) General overheads of ₹ 8,000 would be added to the cost of the additional work.

Required: Prepare a statement showing the economics of the proposition. Should the new customer's offer be accepted?

Note: Labour cost of ₹ 8,000 would be paid if the machine is completed.
Labour cost of ₹ 8,000 would be paid if we do the under mentioned job by utilising such labour and we have to incur material cost of ₹ 12,000 so that the contribution from utilizing such labour in the another job would be sale of ₹ 30,000 – direct material cost ₹ 12,000 – direct labour cost ₹ 8,000 = ₹ 10,000. Absorb fixed overheads are always irrelevant.

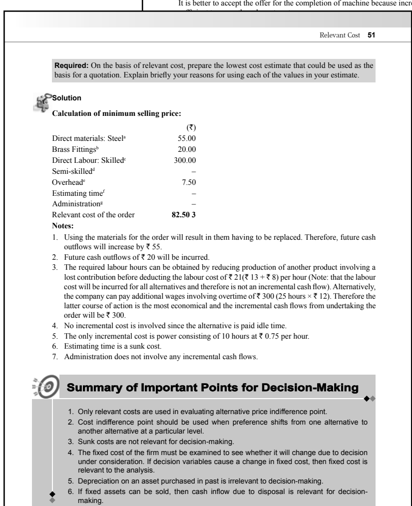
Solution

Statement of cost benefit		
Particulars	W.N. No.	Amount (₹)
Revenue		34,000
Less: Relevant Cost		
Material	2	2000
Labour	3	18,000
Consultancy fee	4	2500
General overhead/Additional		–
	Cost	11,500

It is better to accept the offer for the completion of machine because incremental revenue is

PROBLEMS AND SOLUTIONS

Concepts, algorithms and procedures for solving numerical problems have been given in each chapter. Solutions have specially been designed keeping the CA final examinations in mind. It reflects author's unique and different style of solving Costing and OR problems.



Relevant Cost 51

Required: On the basis of relevant cost, prepare the lowest cost estimate that could be used as the basis for a quotation. Explain briefly your reasons for using each of the values in your estimate.

Solution

Calculation of minimum selling price:

	(₹)
Direct materials: Steel[a]	55.00
Brass Fittings[b]	20.00
Direct Labour: Skilled[c]	300.00
Semi-skilled[d]	–
Overhead[e]	7.50
Estimating time[f]	–
Administration[g]	–
Relevant cost of the order	**82.50 3**

Notes:

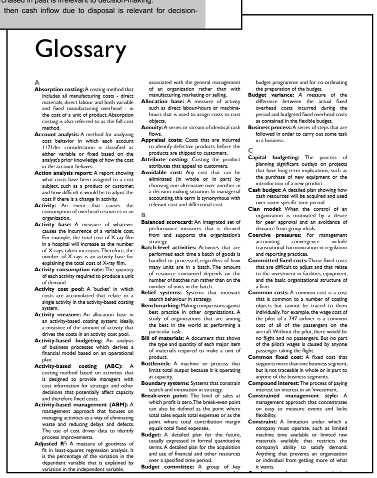
1. Using the materials for the order will result in them having to be replaced. Therefore, future cash outflows will increase by ₹ 55.
2. Future cash outflows of ₹ 20 will be incurred.
3. The required labour hours can be obtained by reducing production of another product involving a lost contribution before deducting the labour cost of ₹ 21(₹ 13 + ₹ 8) per hour (Note: that the labour cost will be incurred for all alternatives and therefore is not an incremental cash flow). Alternatively, the company can pay additional wages involving overtime of ₹ 300 (25 hours × ₹ 12). Therefore the latter course of action is the most economical and the incremental cash flows from undertaking the order will be ₹ 300.
4. No incremental cost is involved since the alternative is paid idle time.
5. The only incremental cost is power consisting of 10 hours at ₹ 0.75 per hour.
6. Estimating time is a sunk cost.
7. Administration does not involve any incremental cash flows.

Summary of Important Points for Decision-Making

1. Only relevant costs are used in evaluating alternative price indifference point.
2. Cost indifference point should be used when preference shifts from one alternative to another alternative at a particular level.
3. Sunk costs are not relevant for decision-making.
4. The fixed cost of the firm must be examined to see whether it will change due to decision under consideration. If decision variables cause a change in fixed cost, then fixed cost is relevant to the analysis.
5. Depreciation on an asset purchased in past is irrelevant to decision-making.
6. If fixed assets can be sold, then cash inflow due to disposal is relevant for decision-making.

SUMMARY

It will help in recaptulating the chapter and its major concepts at a glance.



Glossary

GLOSSARY

A full glossary of advanced management accounting concepts has been provided at the back of the book for quick recap of the important topics discussed throughout.

Contents

Syllabus

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Cost Volume Profit Analysis

- Relevant cost
- Product sales pricing and mix
- Limiting factors
- Multiple scarce resource problems
- Decisions about alternatives such as make or buy, selection of products, etc.

Pricing Decisions

- Pricing of a finished product
- Theory of price
- Pricing policy
- Principles of product pricing
- New product pricing
- Pricing strategies
- Pricing of services
- Pareto analysis

Budgets and Budgetary Controls

The budget manual, Preparation and monitoring procedures, Budget variances, Flexible budgets, Preparation of functional budget for operating and non-operating functions, Cash budgets, Capital expenditure budget, Master budget, Principal budget factors.

Standard Costing and Variance Analysis

Types of standards and sources of standard cost information; evolution of standards, continuous improvement; keeping standards meaningful and relevant; variance analysis; disposal of variances.

- Investigation and interpretation of variances and their inter relationship
- Behavioural considerations.

Transfer Pricings

- Objectives of transfer pricing
- Methods of transfer pricing
- Conflict between a division and a company
- Multi-national transfer pricing.

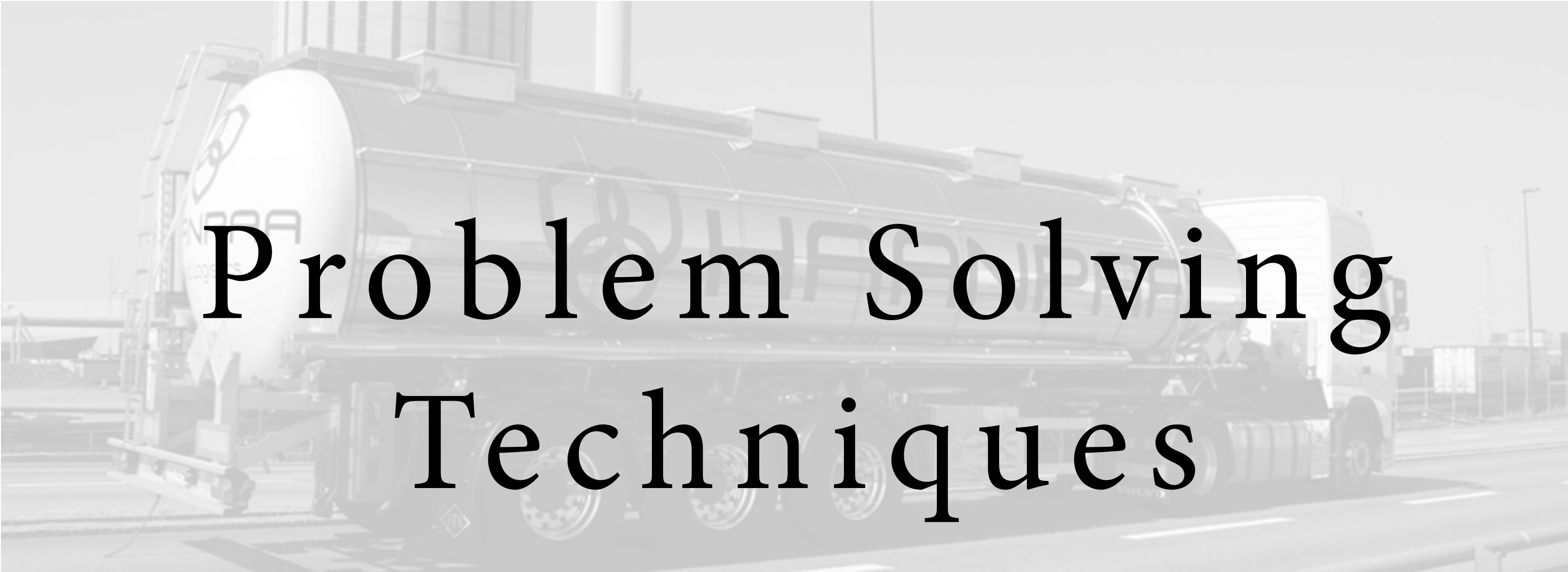
Cost Management in Service Sector

Uniform Costing and Inter Firm Comparison

Profitability Analysis - Product wise/Segment wise/Customer wise

Financial Decision Modeling

- Linear Programming
- Network analysis - PERT/CPM, resource allocation and resource leveling
- Transportation problems
- Assignment problems
- Simulation
- Learning Curve Theory
- Time series forecasting
- Sampling and test of hypothesis



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- In some questions, it may happen that all informations given in the question are not required to be used at the same time. Some information may be useful in requirement number (b) or (c) or so on. The thought on this information should be given only when we are about to attempt that requirement.

⇨

Sometimes several informations given in the question are not required to be used in the light of requirement of the question. We should identify these informations as irrelevant/useless/ baseless and keep ourselves away from them.

⇨

We have to follow the instructions given by the management blindly even if the instruction is contrary to our conceptual understanding. Under no circumstances we have any right to disregard the management instructions.

⇨

It should always be kept in mind that every information is to be read carefully. Casual approach, idea approach or plain reading is extremely dangerous in most of the cases.

⇨

If the question is silent on some point whose interpretation is required for solving the question, we should always follow the most acceptable practice.

⇨

Advice/recommendation to the management should be always specific and unconditional but if there appear to be some ambiguity in the information, give the advice/ recommendation subject to qualifying remarks.

⇨

Presentation can vary from student to student. It is not at all a cause of worry but it has to be ensured that the presentation should be up to acceptable norms (if not the best) with working notes (only essential working notes).

⇨

One of the most essential parts while attempting a question on costing is to ensure proper planning. Before we begin solving the paper, entire paper has to be first read carefully so that the proper strategy can be formulated as to how to attempt the paper. Proper planning and selection of right question at right time is the vital key for greater success.

⇨

Ensure proper time management through effective planning by choosing the sequence of attempting the question in such a manner so that time management may not go out of control. (For example choosing one lengthy question with some light weight question so that time spent over in one question should be set off against another question). Since the Costing question paper is quite lengthy, it is generally not advisable to target attempting for 100 marks. We should target attempting questions for around 90 marks and put our sincere efforts to achieve the same through proper and effective planning. If we are able to achieve higher than our own designed benchmark, it will be a bonus for us.