



PAMIBIA UNIVERSITY
OF SCIENCE AND TECHNOLOGY

FACULTY OF COMMERCE, HUMAN SCIENCES AND EDUCATION
DEPARTMENT OF ACCOUNTING, ECONOMICS AND FINANCE

QUALIFICATION: BACHELOR OF ACCOUNTING HONOURS	
QUALIFICATION CODE: 08 BGAC	LEVEL: 8
COURSE CODE: AMA811S	COURSE NAME: ADVANCED MANAGEMENT ACCOUNTING
DATE: MAY/JUNE 2025	PAPER: THEORY AND CALCULATIONS
DURATION: 3 HOURS	MARKS: 100

1ST OPPORTUNITY EXAMINATION	
EXAMINER(S)	Dr. MOSES NYAKUWANIKA
MODERATOR:	LAZARUS SHINKEVA

INSTRUCTIONS
<ol style="list-style-type: none">1. Capture your full name, student number and assessment number on the first page2. Answer ALL the questions and manage your time properly.3. Number each page correctly4. Write clearly and neatly.5. Do not write in pencil and do not use tip-ex, as this will not be marked.6. The names of people and businesses used throughout this assessment do not reflect the reality and may be purely coincidental.7. SHOW ALL WORKINGS!

THIS QUESTION PAPER CONSISTS OF 6 PAGES (excluding this front page)

QUESTION 1

Case study

Story is a well-established, global publishing conglomerate. The corporation is structured to allow each country of operation to function as an autonomous business unit, that reports back to head office. The data from each business unit is entered into the mainframe computer at the head office. Each business unit can make use of any service offered by other business units and can also offer services to the other units. The services include translation into different languages, typesetting, printing, storage, and so forth. In each country of operation, there is at least one, and usually several, retail outlets.

The core business was traditionally based upon the provision of fictional stories for the mass market. For the past decade, Story has diversified into publishing textbooks and technical literature. The organization currently enjoys a good reputation in both areas of the business and global sales are increasing annually at a rate of 5% for fictional books and 2% for textbooks. Last year seven hundred million fictional works and twenty-five million textbooks were sold.

The corporate management team wishes to increase the growth in sales of textbooks but realizes that they cannot afford to allocate significant resources to this task as the market, and profit margin, for textbooks, are much smaller than for fiction. They also wish to improve the sales performance of fictional books.

Story is currently having trouble in maintaining a corporate image in some countries of operation. For example, several business units may be unaware of additions to the product range. Another example is that a price change in a book is not simultaneously altered by all the business units leading to pricing discrepancies.

Some members of the corporate management team see possible advantages to upgrading the existing computer system to one that is fully networked. Other members are more skeptical and are reluctant to consider enhancing the system.

YOU ARE REQUIRED TO:

(a) Discuss the issues involved in upgrading the existing information system and the proposed changes, regarding both the wider business environment and the decision-making process. **(18 marks)**

(b) Explain what is meant by the terms open systems and closed systems as applied to systems theory. Identify, with justification and where possible, any examples of these from the information given in, or inferred from the case study. **(4 marks)**

(c) Management Information Systems (MIS) allow managers to make timely and effective decisions using data in an appropriate form. List three types of MIS and how they would be used in an organization. **(3 marks)**

[Total = 25 marks]

QUESTION 2

ASOP Co is considering an investment in new technology that will reduce operating costs through increasing energy efficiency and decreasing pollution. The new technology will cost \$1 million and have a four-year life, at the end of which it will have a scrap value of \$100,000.

A licence fee of \$104,000 is payable at the end of the first year. This licence fee will increase by 4% per year in each subsequent year.

The new technology is expected to reduce operating costs by \$5.80 per unit in current price terms. This reduction in operating costs is before taking account of expected inflation of 5% per year.

Forecast production volumes over the life of the new technology are expected to be as follows:

Year	1	2	3	4
Production (units per year)	60,000	75,000	95,000	80,000

If ASOP Co bought the new technology, it would finance the purchase through a four-year loan paying interest at an annual before-tax rate of 8.6% per year.

Alternatively, ASOP Co could lease the new technology. The company would pay four annual lease rentals of \$380,000 per year, payable in advance at the start of each year. The annual lease rentals include the cost of the licence fee.

If ASOP Co buys the new technology, it can claim capital allowances on the investment on a 25% reducing balance basis. The company pays taxation one year in arrears at an annual rate of 30%. ASOP Co has an after tax weighted average cost of capital of 11% per year.

YOU ARE REQUIRED TO:

- Based on financing cash flows only, calculate and determine whether ASOP Co should lease or buy the new technology. **(11 marks)**
- Using a nominal terms approach, calculate the net present value of buying the new technology and advise whether ASOP Co should undertake the proposed investment. **(6 marks)**
- Discuss and illustrate how ASOP Co can use equivalent annual cost or equivalent annual benefit to choose between new technologies with different expected lives. **(3 marks)**

(d) Discuss how an optimal investment schedule can be formulated when capital is rationed, and investment projects are either:

- (i) divisible; or
- (ii) non-divisible.

(5 marks)
[25 marks]

QUESTION 3

Envico is a business services company that provides seminars on various aspects of current and recently announced changes in employment legislation. Envico has decided to enter a one-year renewable contract with Mieras Business Associates, which owns large premises that are suitable for holding educational seminars in each of the eight cities.

Mieras Business Associates has offered a choice of four different contracts, each of which relates to seminar rooms of differing sizes. These are known as room types A, B, C, and D, which can accommodate 100, 200, 300, and 400 delegates respectively.

Envico will charge an all-inclusive fee of \$80 per delegate at every seminar throughout the year.

Envico must decide in advance of the forthcoming year which size of conference room to contract for. It is not possible to contract for a different size conference room in different cities, ie only one size of room can be the subject of the contract with Mieras Business Associates.

Due to the rapid growth in interest regarding environmental issues and corporate social responsibility, and the large amount of forthcoming legislative changes, Envico has decided to hold one seminar every week of the year in each city. Sometimes a regional government representative will attend and speak at such seminars. On other occasions, a national government representative will attend and speak at such seminars. The rest of the time the speakers at seminars are representatives from within Envico.

Envico has estimated the following frequency regarding seminars to be held during the forthcoming year:

Category of speaker:	%
Envico representative	20
Regional government representative	50
National government representative	30

Market research has indicated that where a national government representative is in attendance, Envico can be reasonably assured of selling 400 seminar places, and where a regional government representative is in attendance 200 seminar places can be sold. Envico expects to sell only 100 seminar places when there is no attendance by a government representative.

The following contribution table has been devised to calculate the expected annual contribution from each decision option.

Places sold	Contribution if 100 places available \$	Contribution if 200 places available \$	Contribution if 300 places available \$	Contribution if 400 places available \$
100	832,000	(1,164,800)	(2,662,400)	(3,328,000)
200	832,000	2,163,200	665,600	0
400	832,000	2,163,200	3,993,600	6,656,000

YOU ARE REQUIRED TO:

- (a) Calculate the cost incurred by Envico for each type of room per seminar. **(8 marks)**
 - (b) (i) Advise Envico on the size of the seminar room that should be contracted from Mieras Business Associates, using the expected value criterion. Your answer should use the expected annual contribution from each decision option. **(4 marks)**
 (ii) Explain the limitations of the expected value approach. **(3 marks)**
 - (c) Determine whether your decision in (a) would change if you were to use the maximin and minimax regret decision criteria. Your answer should be supported by relevant workings. **(6 marks)**
 - (d) Suggest research techniques that could be used to reduce uncertainty. **(4 marks)**
- [Total = 25 marks]**

QUESTION 4

Fit Co specialises in the manufacture of a small range of hi-tech products for the fitness market. They are currently considering the development of a new type of fitness monitor, which would be the first of its kind in the market. It would take one year to develop, with sales then commencing at the beginning of the second year. The product is expected to have a life cycle of two years, before it is replaced with a technologically superior product. The following cost estimates have been made.

	Year 1	Year 2	Year 3
Units manufactured and sold		100,000	200,000
Research and development costs	\$160,000		
Product design costs	\$800,000		
Marketing costs	\$1,200,000	\$1,000,000	\$1,750,000
Manufacturing costs:			
Variable cost per unit		\$40	\$42
Fixed production costs		\$650,000	\$1,290,000
Distribution costs:			
Variable cost per unit		\$4	\$4.50
Fixed distribution costs		\$120,000	\$120,000

Selling costs:			
	Variable cost per unit	\$3	\$3.20
	Fixed selling costs	\$180,000	\$180,000
Administration costs	\$200,000	\$900,000	\$1,500,000

Note: You should ignore the time value of money.

YOU ARE REQUIRED TO:

- (a) Calculate the life cycle cost per unit. **(7 marks)**
- (b) After preparing the cost estimates above, the company realises that it has not considered the effect of the learning curve on the production process. The variable manufacturing cost per unit above, of \$40 in year 2 and \$42 in year 3, includes a cost for 0.5 hours of labour. The remainder of the variable manufacturing cost is not driven by labour hours. The year 2 cost per hour for labour is \$24 and the year 3 cost is \$26 per hour. Subsequently, it has now been estimated that, although the first unit is expected to take 0.5 hours, a learning curve of 95% is expected to occur until the 100th unit has been completed.
Calculate the revised life cycle cost per unit, considering the effect of the learning curve.
Note: the value of the learning co-efficient, b , is -0.0740005 . **(13 marks)**
- (c) Discuss the benefits of life cycle costing. **(5 marks)**
- [Total 25 marks]**

End of Examination