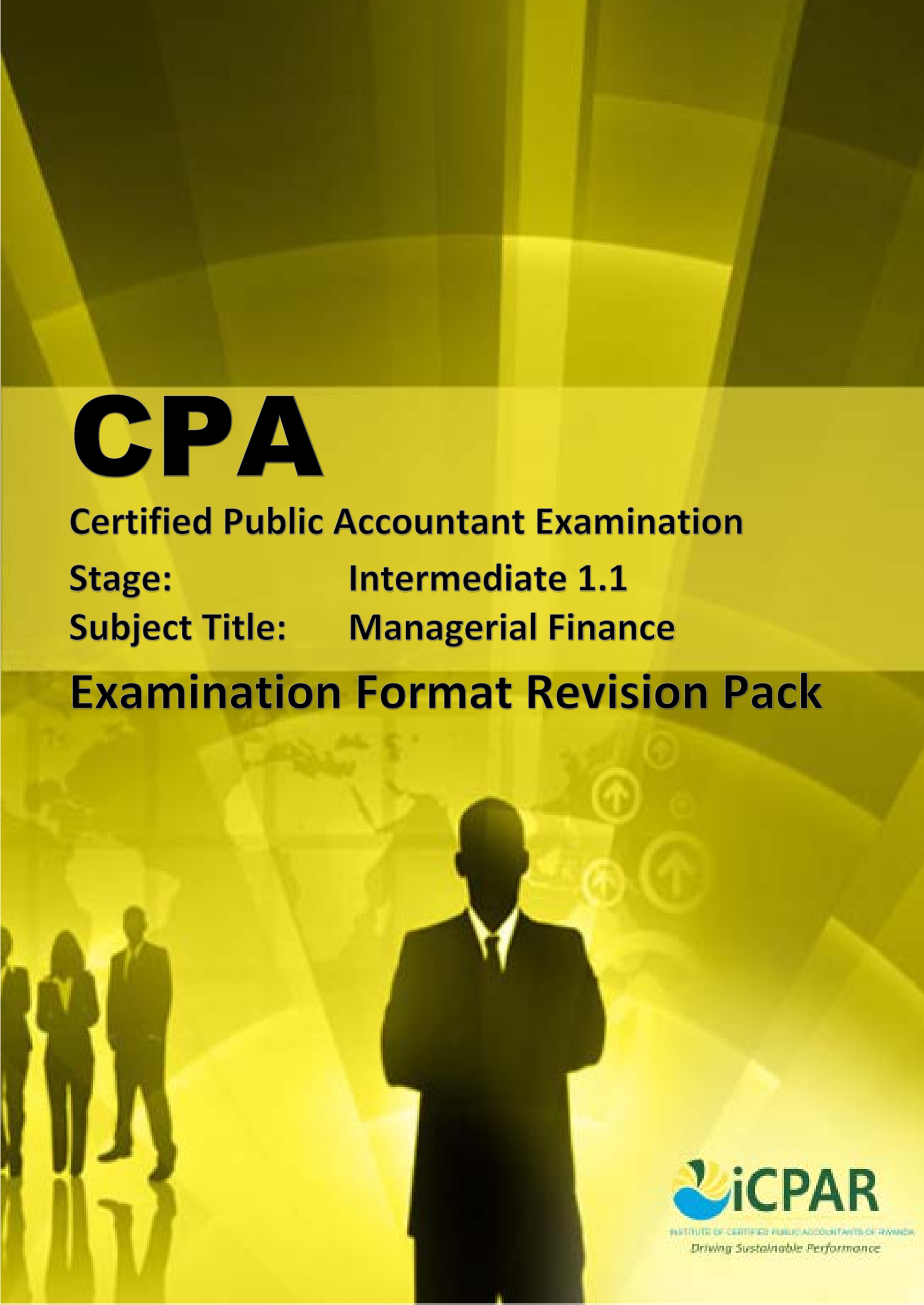
CPA

Certified Public Accountant Examination

Stage: Intermediate 1.1

Subject Title: Managerial Finance

Examination Format Revision Pack



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INSTITUTE OF CERTIFIED PUBLIC ACCOUNTANTS OF RWANDA

Driving Sustainable Performance

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I 1.1 MANAGERIAL FINANCE

INTERMEDIATE 1

EXAMINATION FORMAT QUESTIONS & SOLUTIONS

NOTES:
Section A – Answer Question 1 and Question 2 and **either** Part A or Part B of Question 3.
Section B – Answer Question 4 and **either** Part A or Part B of Question 5.

(If you provide answers to both Parts A and B in Question 3 and/or Question 5, you must draw a clearly distinguishable line through the answer Part(s) not to be marked. Otherwise, only the first answer(s) to hand for each of these questions will be marked.)

MANAGERIAL FINANCE TABLES ARE PROVIDED

TIME ALLOWED:
3 hours, plus 10 minutes to read the paper.

INSTRUCTIONS:
During the reading time you may write notes on the examination paper but you may not commence writing in your answer book. Please read each Question carefully.

Marks for each question are shown. The pass mark required is 50% in total over the whole paper.

Start your answer to each question on a new page.

You are reminded that candidates are expected to pay particular attention to their communication skills and care must be taken regarding the format and literacy of the solutions. The marking system will take into account the content of your answers and the extent to which answers are supported with relevant legislation, case law or examples, where appropriate. List on the cover of each answer booklet, in the space provided, the number of each question(s) attempted.

SECTION A

(Answer Questions 1 and 2 and either Part A or Part B of Question 3.)

1. Bank House Limited (BH) is an events management company. The company is considering tendering for the rights to host a Swiss-style Christmas market in Kigali. The market will have capacity to accommodate 60 stalls which will sell a mixture of crafts, foodstuffs and novelties. BH has researched similar ventures in London and Cologne and has been impressed by the quality of stall holders attracted and the popularity amongst customers. BH's marketing manager has estimated that the following percentage sales of total stalls available for rental will be achieved for the three years commencing in 2013:

STALL RENTALS	**YEAR 1**	**YEAR 2**	**YEAR 3**
FOOD	80%	90%	100%
CRAFT	60%	80%	100%
NOVELTY	50%	75%	75%

The tender will cover a three year period. BH will be required to make an upfront payment of RWF1,000,000, with an annual payment of 10% of the gross rental income generated by BH, subject to a minimum weekly payment of RWF10,000, and a maximum weekly payment of RWF15,000. This payment is to be made one year in arrears.

The market will run for six weeks (42 days) from mid-November to the end of December each year. There will be capacity to house 150 stalls, 40% of which will be dedicated to food stalls, 30% to craft stalls and the remainder to novelty stalls.

The indicative rental charged per stall per week will be:

- Food RWF1000 (Increased by 10% per year thereafter)
- Craft RWF500 (Increased by 20% per year thereafter)
- Novelty RWF1500 (No annual increase planned)

Security will be required at a cost of RWF500 per day, increasing by 10% each year thereafter.

BH's financial controller has gone on sick leave. The company's managing director has asked you to determine the rate at which the proposal should be discounted for investment appraisal purposes. You have advised that the company's Weighted Average Cost of Capital (WACC) should be used but this figure is not to hand. The capital structure of the company is:

BH Limited - FINANCE STRUCTURE

SOURCE OF FINANCE	**NOMINAL VALUE (RWFMs)**
RWF2 ORDINARY SHARES	15
RWF1 22% PREFERENCE SHARES	5
8% IREDEEMABLE LOAN STOCK	10

The ordinary shares are trading at RWF3.50 ex div; whilst the preference shares are trading at RWF2.42 cum div. The most recent dividend paid on ordinary shares was RWF0.40. An annual growth rate of 10% is expected for the foreseeable future. The irredeemable loan stock is trading at 335% of nominal value ex-interest.

BH pays corporation tax at an effective rate of 20% one year in arrears.

REQUIRED:

a) Calculate Bank House Ltd's Weighted Average Cost of Capital. **(5 Marks)**

b) Determine the Net Present Value of the Dublin Market proposal if discounted at the company's WACC and advise the company, with reasons, whether or not it should tender for the contract. **(20 Marks)**

(Total: 25 Marks)

2. A client company, Wet Limited, has recently launched a scented cleaning cloth that reduces room odours. The product's first month's results (July 2011) were very disappointing compared to budget even though the sales volumes were well in excess of what was expected. The management team is at a loss to explain the results and has asked you to prepare a standard costing reconciliation which incorporates a performance report for the month ended July 2011.

   You have spent three hours reviewing the standard cost files and month-end performance report and have noticed that:

i. the company employs standard absorption costing.
ii. the company budgeted to sell 5,000 cloths at the budgeted selling price of RWF5 each, whilst it actually sold 5,200 in the month reported upon.
iii. whilst you cannot locate the standard cost card for the product, you have determined the following relevant information:
   - the stock manager has indicated that the cloth should use 0.1 metre of fabric which costs RWF10 per metre.
   - the production manager has estimated that it takes two minutes labour input to produce each cloth.
     Labour costs RWF15 per hour, the variable overhead per cloth equals 20% of the labour cost per cloth.
   - The factory manager has confirmed that the product is budgeted to absorb RWF2 fixed overhead per cloth.

The actual profit statement produced from the system reads as follows:

Cleaning Cloth – July 2011 Performance Statement	**RWF**
Sales (5,200 Cloths)	21,840
Direct Material (490 metres purchased and used)	-4,410
Direct Labour (260 hours)	-3,640
Variable Overhead Incurred	-650
Fixed Overhead Incurred	-9,800
ACTUAL PROFIT	3,340

REQUIRED:

a) Prepare a standard cost card for the cleaning cloth product. **(3 Marks)**

b) Calculate the budgeted profit for the cloth for the month ended July 2011. **(2 Marks)**

c) Prepare an operating statement reconciliation for the cleaning cloth product for the month ended July 2011. **(11 Marks)**

d) Discuss the reasons for the adverse variances reported and suggest proposed actions to correct each adverse variance. **(4 Marks)**

(Total: 20 Marks)

Answer either Part A or Part B.

3. Your client, Beach Limited, is a bagel manufacturing company. The company has grown considerably over the last three years. However, the management accounting systems have not been developed sufficiently to adequately report upon and control the performance of the business. The company's finance manager (who is not a qualified accountant) has sought your advice on the potential implementation of a linked system of budgetary control and standard costing.

Part A)

REQUIRED:

Prepare a briefing note for the finance manager of Beach Limited which clearly explains the steps in the budget setting system.

(15 Marks)

OR

Part B)

REQUIRED:

Explain the term ‘standard cost’ and describe what a system of standard costing entails. Identify the difficulties that may be encountered when setting standard costs.

(15 Marks)

Section B

Answer Question 4 and either Part A or Part B of Question 5.

4. The following multiple choice question contains 8 sections, each of which is followed by a choice of answers. Only one of the offered solutions is correct. Each question carries 2.5 marks. Give your answer to each section on the answer sheet provided.

   (Information relevant to MCQ questions 1, 2, 3 and 4.)

   J PLC, a quoted company on The Frankfurt Stock Exchange, has 300 million shares in issue. The current market price of a J PLC share is €6.

   S PLC, an Irish quoted company, has 600 million shares in issue currently trading at €9 each.

   At a private board meeting held on 1 September 2010, S PLC agreed to make a takeover bid to acquire J PLC. It is expected that the increased revenues from the combination will deliver additional shareholder value as measured in net present value of €900 million. In addition, the merged company is expected to deliver recurrent cost savings with a net present value of €1,200 million. The Board of S PLC agreed to make a takeover bid for J PLC of €11 cash per share.

   On 2 September 2010, S PLC publicly announced the terms of the offer. The company did not release any details of the additional revenues or cost savings.

   On 14 September 2010, S PLC publicly announced details of the increased revenues only (not the cost savings). On 20 September 2010, S PLC announced publicly details of the cost savings expected to be achieved.

1) Assuming that the capital markets display strong form efficiency, the price of one S PLC share at close of business on 1 September 2010, should be:

a) €6 per share
b) €9 per share
c) €11 Per share
d) €10 per share

2) Assuming that the capital markets display semi-strong form efficiency, the price of one J PLC share at the close of business on 1 September 2010, should be:

a) €6 per share
b) €9 per share
c) €11 Per share
d) €8 per share

3) On 1 September 2010, S PLC decided not to offer cash but to make a paper offer of two S PLC shares for every one J PLC share. You may assume that the capital markets display strong form efficiency. What should the price of one S PLC share on 1 September 2010 be?

a) €9 per share
b) €5.75 per share
c) €6.75 Per share
d) €7.75 per share

4) On 1 September 2010, S PLC decided not to offer cash but to make a paper offer of one S PLC share for every one J PLC share. You may assume that the capital markets display semi-strong form efficiency. What would be the price of one J PLC share on 14 September 2010?

a) €6 per share
b) €9 per share
c) €6.75 Per share
d) €7.75 per share

Tracksuit Limited is a company that manufactures high quality sporting apparel. The company has been attempting to improve its working capital management and operational performance for the last year. The company's most recent audited accounts have now been completed and management are anxious to determine whether its efforts have paid off. Relevant extracts from the accounts read as follows:

Tracksuit Limited
Statement of Financial Position as at 31 July 2011

	2010 RWFm	**2011 RWFm**
Non Current Assets at NBV		
Property and Plant	580	1,520
Other Assets	10	40
Total Non-Current Assets	590	1,560
Current Assets		
Inventories	330	360
Trade Receivables	520	730
Cash & Cash Equivalents	0	280
Total Current Assets	850	1,370
Total Assets	1,440	2,930
Equity & Liabilities		
Equity Attributable to Equity Holders		
Share Capital (@ RWF2,000 each)	100	100
Other Reserves	920	2,500
	1,020	2,600
Non-Current Liabilities		
Long-term borrowings	400	0
Current Liabilities		
Trade payables	220	310
Short-term Borrowings	120	0
Current portion of long term borrowings	180	20
Total Current Liabilities	520	330
Total Liabilities	1,440	2,930

Tracksuit Limited
Income Statement - Year Ended 31 Dec 2011

	2010	**2011**
	RWFm	**RWFm**
Revenue	2,500	4,200
Cost Of Sales	1,300	2,100
Gross Profit	1,200	2,100
Less: Expenses	400	520
Net Profit	800	1,580

5) Tracksuit Limited's reduction in average collection days in 2011 was:

   a) 3 days
   b) 13 days
   c) 23 days
   d) 33 days

6) Tracksuit Limited's reduction in the working capital cycle days in 2011 was:

   a) 5 days
   b) 15 days
   c) 25 days
   d) 35 days

7) Tracksuit Limited's quick ratio has improved by how many times in 2011:

   a) two times
   b) three times
   c) four times
   d) five times

8) Tracksuit Limited's Return on Capital employed (ROCE) has changed in 2011 by:

a) - 3%
b) 0%
c) + 5%
d) - 26% **(Total: 20 Marks)**

Answer either part (a) or part (b)

5.

i. Pink Limited produces coloured fabrics in its factory. The company has been approached by a national retail chain regarding the possibility of providing 500,000 t-shirts as a one-off order with the potential for further contracts if the t-shirts are well received by its customers. For Pink Limited to fulfil the order it will have to forego the sale of 50,000 metres of its normal sales product, bulk rolls of material. Each roll comprises 10,000 metres. You have been asked by Pink Limited's chief executive to assess the profitability of the proposal.

You have been given the following relevant information:

- each roll of fabric (10,000 metres) is currently sold at RWF50,000,000. This fabric will be used for the manufacture of t-shirts with the loss of the current business if the proposal is accepted.
- each t-shirt will be sold at RWF1,000.
- the basic fabric (presently sold) would have to be cut into t-shirt size at a cost of RWF100 per t-shirt.
- the electricity cost of machining the fabric to produce the t-shirts will total RWF15,000,000.
- additional staff costing RWF20,000,000 would need to be employed to produce the t-shirts.
- the cost of the packaging for each t-shirt will be RWF50.
- a machine would have to be leased to pack the t-shirts. The annual lease cost of this machine is RWF8,000,000.

REQUIRED:

Prepare a briefing note for the chief executive of Pink Limited that:

a) indicates based on purely financial grounds, whether or not to produce t-shirts. **(12 Marks)**

b) provides qualitative reasons to be considered when making the decision whether or not to accept the proposal. **(8 marks)**

(Total: 20 Marks)

OR

ii. Purple Limited is a light engineering firm. The company specialises in the production of go-carts for racing enthusiasts. The company enjoys an international reputation for the durability of its carts. The company's marketing manager has just completed the following estimates of the demand for next year for the three different categories of cart produced:

PURPLE LIMITED - ANNUAL DEMAND

CART TYPE	**BEGINNER**	**MODERATE**	**ADVANCED**
ANNUAL DEMAND (CARTS)	40	20	30

The company's cost accountant has provided the following cost profiles and prices for each cart type.

PURPLE LIMITED - REVENUES AND COSTS PER CART

CART TYPE	**BEGINNER**	**MODERATE**	**ADVANCED**
	RWF '000	**RWF '000**	**RWF '000**
SELLING PRICE	2,000	4,000	8,000
DIRECT LABOUR (skilled only)	200	800	1,200
DIRECT MATERIALS (Aluminium) only)	1,000	2,000	3,000
VARIABLE OVERHEAD	300	600	800

Each labour hour costs RWF20,000 and each metre of aluminium costs RWF200,000. The human resources manager is presently determining the number of skilled labour hours that will be available to the company for the next year.

The company also incurs RWF5,000,000 per month on fixed costs which primarily constitutes factory rent and rates. Each cart uses special lightweight aluminium in its construction. The company's procurement manager is concerned that this material might prove difficult to source for the forthcoming year. He is presently travelling throughout Europe in an effort to source sufficient quantities of this material for the forthcoming year and he is expected to return tomorrow with his findings.

REQUIRED:

Prepare a briefing note for the management team of Purple Limited that:

a) determines the contribution earned for the forthcoming year if there is no limitation in the amount of aluminium available to Purple Limited. **(5 Marks)**

b) advises on the optimum production schedule for the forthcoming year and the contribution earned assuming that available for the year are 600 metres of aluminium and 3,000 skilled labour hours. **(15 Marks)**

(Total: 20 Marks)

END OF PAPER

SUGGESTED SOLUTIONS

SOLUTION 1

a) Bank House Ltd's Weighted Average Cost of capital (WACC) is 14% calculated as follows

BANK HOUSE Ltd

WACC	**Note**	**MV**	**% Cost**	**%Weight**	**WACC**
Ordinary Shares (ex div)	1	52,500,000	22.57%	54.12%	12.22%
Preference Shares (ex div)	2	11,000,000	10.00%	11.34%	1.13%
Irredeemable Debentures	3	33,500,000	1.91%	34.54%	0.66%
Weighted Average Cost of Capital		97,000,000		100.00%	14.01%

Note 1) Cost of Equity (Gordon's Growth Model)

[.4*(1+.1)/(3.5)] +.1 = 22.57%

Note 2)Cost of Preference Shares

Dividend Payable/Ex Div. Market value

= 22/(242-22) * 100 = 10.00%

Note 3)Cost of Irredeemable Debentures

Interest Payable (less tax shield)/Ex Int. Market value

= (8*(1-.2) / 335 * 100 = 1.91%

b) The net present value of the proposal is Rwf 533,197 positive. Detailed workings are attached.
On that basis the company should tender for the running of the market.

BANK HOUSE Ltd – NPV CALCULATION

CASHFLOWS	**YEAR 0**	**YEAR 1**	**YEAR 2**	**YEAR 3**	**YEAR 4**
STALL INCOME		571,000	789,750	933,750	
PAYMENT ON INCOME			-60,000	-78,975	-90,000
SECURITY		-21,000	-23,100	-25,410	
INITIAL PAYMENT	-1,000,000				
NET ANNUAL CASHFLOWS	-1,000,000	550,500	706,650	829,365	-90,000
DISCOUNT FACTOR AT 14%	1	0.8772	0.7695	0.675	0.5921
PRESENT VALUE	-1,000,000	482,898	543,767	559,821	-53,289
NET PRESENT VALUE	533197				

SOLUTION 2

a) The standard cost card of the product is:

Cleaning Cloth - Standard Cost Card	**RWF '000**
Direct Material (.1 metres at RWF10k per metre)	1.0
Direct labour (2 minutes at RWF15k per hour)	0.5
Variable Overhead (20%)	0.1
Fixed Overhead	2.0
STANDARD COST PER CLOTH	3.6

b) The budgeted profit for the month is:

Cleaning Cloth – Budgeted Monthly Profit	**RWF '000**
Sales (5,000 Cloths)	25,000
Direct Material	-5,000
Direct Labour	-2,500
Variable Overhead	-500
Fixed Overhead	-10,000
BUDGETED PROFIT	7,000

c) Month End Operating Statement

Details	Note	Variances Favourable	Adverse	Total
Budget Profit				**7,000**
Variances				
Sales Price	1		-4,160	
Sales Volume	2	280		
Direct Materials Price	3	490		
Direct Materials Usage	4	300		
Direct Labour Rate	5	260		
Direct Labour Efficiency	6		-1,300	
Variable Overhead Expenditure	7	130		
Variable Overhead Efficiency	8		-260	
Fixed Overhead Expenditure	9	200		
Fixed Overhead Expenditure	9	400		
Sub Totals		2,060	-5,720	
Net Variance				-3,660
Actual Profit				**3,340**

Operating Statement Supporting Notes - RWF values in thousands

Note 1) Sales Price Variance

(Actual Unit Price - Budgeted Unit Price) * Actual Units Sold

(4.20 - 5) * 5,200 = -4,160 Adverse

Note 2) Sales Volume Variance

(Actual Units Sold - Budgeted Unit Sales) * Standard Profit Per Unit

(5,200-5,000) * 1.4 = 280 Favourable

Note 3) Direct Materials Price Variance

(Standard Unit Cost - Actual Unit Cost) * Actual Units Purchased

(10 - 9) * 490 = 490 Favourable

Note 4) Direct Materials Usage Variance

(Standard Unit Usage (for the actual level of production)- Actual Units Used) * Standard Cost Per Unit (520 - 490) * 10 = 300 Favourable

Note 5) Direct Labour Rate Variance

(Standard Hourly Rate - Actual Rate Per Hour) * Actual Hours Worked

(15 - 14) * 260 = 260 Favourable

Note 6) Direct Labour Efficiency Variance

(Standard Hours (for the actual level of production)- Actual Hours Worked) * Standard Rate Per Hour (173.33 - 260) * 15 = 1,300 Adverse

Note 7) Variable Overhead Expenditure Variance

(Standard Hourly Cost - Actual Cost Per Hour) * Actual Hours Worked

(3 - 2.5) * 260 = 130 Favourable

Note 8) Variable Overhead Efficiency Variance

(Standard Hours (for the actual level of production)- Actual Hours Worked) * Standard Cost Per Hour (173.33 - 260) * 3 = 260 Adverse

Note 9) Fixed Overhead Expenditure Variance

(Budgeted Fixed Overhead - Actual Fixed Overhead)

(10,000 - 9,800) = 200 Favourable

Note 10) Fixed Overhead Volume Variance

(Actual Units Produced - Budgeted Unit Production) * Fixed Overhead Absorbed per unit (5,200 - 5,000) * 2 = 400 Favourable

d) Explaining and Correcting Adverse Performance

Direct Labour Efficiency – overspend RWF1,300k

Variable Overhead efficiency overspend RWF260k

During the month our direct labour was inefficient compared to standard expectation. As a result there was an overspend of RWF1,300. This Labour inefficiency is likely to be as a result of employing lower grade staff and because we are producing a new product with the resulting learning curve improvement not fully taking place. This inefficiency also directly results in the Variable Overhead overspend of RWF260k.

Management must try to employ appropriately skilled labour in future months and improve training and supervision of operatives. This will also help reduce the variable overhead efficiency variance to nil.

Sales Price - under recovery of income RWF4,160k

The 5,200 cloths were sold during the month at RWF4,200 each rather than the budgeted RWF5. Whilst this price reduction was probably required in order to achieve market penetration, resulting in selling 200 more cloths than budgeted (for this new product), but as a consequence of this price reduction income was RWF4,160,000 lower than budgeted.

We should re-instate the price to the full RWF5,000 for future month’s and push the sales force to maintain volumes to those budgeted.

SOLUTION 3

Briefing Note

To: The Finance Manager, Beach Limited.
From: E C, CPA
Subject: Budget Setting & Steps in the Process

Students in their answers will be expected to expand on the points below:

A. Steps in Budgeting Setting Process

- Communicating details of budget policy
- Determining the factor that restricts performance
- Preparation of the sales and functional budgets
- Preparation of master budgets
- Initial presentation of budgets
- Negotiation of budgets
- Coordination and review of budgets
- Final acceptance of the budget
- On-going review

B. Standard Costing

A Standard Cost is a planned unit cost of a product, component or service. A standard cost card shows the full details of the standard cost of each product.

Standard Costing is a control technique that reports variances from the standard expectation for each control period (normally monthly). It does so by comparing actual costs and revenues to pre-set standards. This helps facilitate management by exception as management can concentrate on acting on the most significant variances.

There are a number of problems associated with standard setting including:

1) deciding on how to incorporate inflation into planned unit costs
2) agreeing on the performance standard expected for labour inputs e.g. attainable or ideal
3) deciding on the quality of materials to be used
4) estimating material prices where seasonal or commodity market variations may be significant

SOLUTION 4

1. D

S Intrinsic Value			5,400,000,000
J Intrinsic Value			1,800,000,000
Revenue Increase			900,000,000
Cost Reduction			1,200,000,000
J Consideration			-3,300,000,000
S Resultant	600,000,000	10	6,000,000,000

2. A

No change as a private meeting – Solution is €6 per share.

3. D

Strong Form Efficiency			
J Intrinsic			1,800,000,000
S Intrinsic			5,400,000,000
Revenue Increase			900,000,000
Cost Reduction			1,200,000,000
TOTAL INTRINSIC			9,300,000,000
SHARES	1,200,000,000	7.75	9,300,000,000

4. B

Semi-Strong Form Efficiency			
J Intrinsic			1,800,000,000
S Intrinsic			5,400,000,000
Revenue Increase			900,000,000
TOTAL INTRINSIC			8,100,000,000
SHARES	900,000,000	9	8,100,000,000

5. B

Tracksuit Limited
Operating Cycle Calculation (Days)

	2010	**2011**
	Days	**Days**
Stock Days	93	63
Debtor Days	76	63
Creditor days	-62	-54
Operating Cycle	107	72

6. D

Tracksuit Limited
Operating Cycle Calculation (Days)

	2010	**2011**
	Days	**Days**
Stock Days	93	63
Debtor Days	76	63
Creditor days	-62	-54
Operating Cycle	107	72

7. B

Tracksuit Limited

Liquidity Indicators	**2010**	**2011**
Current ratio	1.63	4.15
Quick Ratio	1.00	3.06

8. C

Tracksuit Limited Performance Indicators	**2010**	**2011**
GP Margin	48%	50%
NP Margin	32%	38%
ROCE	56%	61%

SOLUTION 5

A. Briefing Note

To: Pink Limited
From: M. Groan, Financial Advisor
Subject: T Shirt Decision – Financial Analysis
Date: 19th September 2011

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Purpose
This note considers the financial implications of the proposal to produce T Shirts for the international retail chain. This essentially involves a comparison of the costs of manufacturing the T Shirts with the incremental revenue generated.

Pink Ltd - Financial Analysis

T- Shirt Proposal	**RWF'000**
Incremental Costs of Manufacture	
Cutting (RWF100 per shirt * 500,000 shirts)	50,000
Increased Direct Labour	20,000
Electricity	15,000
Packing (RWF50 * 500,000)	25,000
Incremental Fixed Overheads - Machine	8,000
Total Incremental Cost	118,000
Incremental Revenue	
Present Income (5 rolls * RWF50,000,000)	250,000
T Shirt Income (500,000 * RWF1,000)	500,000
Incremental Revenue	250,000
Incremental Profit From Proposal	132,000

Financial Conclusion
On a strictly financial analysis Pink Limited should produce and sell the T shirts. This would produce a further RWF132,000,000 profit.

Other Factors

- potential for further business from national retail chain
- whether or not to disappoint a current customer
- development of expertise to enter T Shirt market
- provision of extra jobs
- availability of staff and skills to cut T shirts

Solution 5

B.

a) Purple Limited - No limitation on production or sales

Cart Type	**Beginner**	**Moderate**	**Advanced**	**Total**
Contribution per cart	500	600	3,000	
Maximum sales	40	20	30	
Total contribution	20,000	12,000	90,000	122,000
Fixed costs				-60,000
Monthly profit RWF '000				62,000

b) Purple Limited – limits: 600m aluminium and 3,000 skilled hours

Cart Type	**Beginner**	**Moderate**	**Advanced**	**Total**
Contribution per cart	500	600	3,000	
Metres per cart	5	10	15	
Contribution per metre	100	60	200	
Ranking	2	3	1	
Production - carts	30	0	30	
Total contribution	15,000	0	90,000	105,000
Fixed costs				-60,000
Monthly profit RWF '000				45,000

NB Direct Labour (skilled hours) does not represent a constraint as the full demand can be produced with the 3,000 hours available.

END OF SOLUTIONS

I 1.1 MANAGERIAL FINANCE

INTERMEDIATE 1

EXAMINATION FORMAT QUESTIONS & SOLUTIONS

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SECTION A

(Answer Questions 1 and 2 and either Part A or Part B of Question 3.)

1. Freeform Limited, a plastics manufacturer based in KIGALI has recently been unsuccessful in tendering for international contracts and was planning to downsize operations.
   However, Freeform Limited has just been awarded a domestic contract to supply 600,000 metres of plastic roofing for a new stadium to be built in BUTARE. The company plans to manufacture 200,000 metres of roofing each year for three years. All roofing will be transported to the stadium in year three.

   Freeform Limited is presently considering sites close to the new stadium to house its production operations. Details of the two preferable sites are as follows:

   Note: All monetary values are in RWF'000 and denoted in the text as RWFk

NGOMA

This existing factory, which is fifteen Km from the new stadium in BUTARE could be rented with no capital development cost. The proposed three year lease will cost RWFk 500,000 per annum with a 5% inflation uplift each year commencing in year two.

KIGEMBE

This brownfield site, which is sixteen Km from BUTARE can be bought for RWFk 4,000,000. Building costs are estimated at RWFk 1,500,000. Freeform Limited's advisors have indicated that the site and premises could be sold in three years' time for Rwfk 3,000,000.

Other relevant information pertaining to each site is as follows:

NGOMA

- As the factory has limited space it would require the purchase of new compact machinery costing RWFk 4,000,000. This would have no residual value at the end of the project.
- Each metre of roofing would cost RWFk 10 in direct materials for the whole of the contract. With the new machinery purchased there will be no material wastage.
- The new members of staff would be required to operate and maintain the equipment. Staff would cost RWFk 455,000 per year with a pay award of 10% commencing in year three.
- At the end of the project all staff would be made redundant at a total cost of RWFk 260,000.
- Consumables (electricity / water etc.) are estimated to cost RWFk 5 per metre of roofing for the duration of the contract.
- The roofing will be transported in year three of the project to BUTARE by special road-trains at a cost of RWF 250 (per kilometre per metre of roof). These are in development

KIGEMBE

- This factory will use equipment and staff that are currently idle at Freeform's KIGALI plant.
- Each metre of roofing would cost RWFk 12 (for the duration of the contract) for direct materials.
- The staff members who were to be made redundant in KIGALI at a cost of RWFk 750,000 will be retained and relocated from KIGALI for the duration of the project. They will be paid in total RWFk 450,000 per annum with no pay award uplift.
- All staff members have agreed to accept a reduced redundancy payment at the end of the three year project. This will cost RWFk 600,000
- Each relocated member of staff will be given a subsistence allowance fixed for the duration of the contract. This will cover their travelling and accommodation costs. There will be no change in the amount paid per month for the full duration of the contract. This will cost each year RWFk 360,000
- Consumables will cost RWFk 6 per metre of roofing for the duration of the contract.
- The roofing will be transported in year three by road to BUTARE using Freeform Limited's own transport. A lorries will be leased for the purpose for the year at a monthly cost of RWFk 4,000.
- Lorry drivers will be employed for the final year of the project at a cost of RWFk 30,000 per year, with no redundancy cost. The lorries' costs will be RWFk 5 per Km when carrying a full load and RWFk 2 per Km when not carrying a load.

- A toll has been introduced on the road and for a lorry is currently RWFk 20 and is expected to increase to RWFk 35 by year three.
- A lorry can carry 50 metres of roofing per load.

Other Information

Freeform Limited has a cost of capital of 10%. Ignore Taxation.

REQUIRED:

The Board of Freeform Limited is committed to pursuing either the Ngoma or Kigembe options, but they are seeking advice on the most favourable option based on the cost structures outlined. Prepare a report for the Board of Freeform Limited which:

i. recommends the optimal site for the factory based on a present value of costs approach. **(18 Marks)**

ii. considers four non-financial factors to be considered when making the decision where to locate the factory**.** **(6 Marks)**

Format and Presentation. (1 Mark)

(TOTAL: 25 MARKS)

2. Frankie Limited is a rapidly expanding company that manufactures plastic shoes. In the last year, Frankie Limited has invested significantly in its operating capability to support a contract to supply a US based customer.
   Extracts from Frankie Limited's most recent accounts are as follows:

Frankie Limited
Balance Sheet as at 31st Dec 2011

	2010	**2011**
	Rwf m	**Rwf m**
Non Current Assets at NBV		
Property and Plant	380	2,600
Other Assets	120	220
Total Non-Current Assets	500	2,820
Current Assets		
Inventories	180	350
Trade Receivables	200	410
Cash & Cash Equivalents	320	1,740
Total Current Assets	700	2,500
Total Assets	1,200	5,320
Equity & Liabilities		
Equity Attributable to Equity Holders		
Share Capital	200	3,200
Other Reserves	300	1,320
	500	4,520
Non-Current Liabilities		
Long term borrowings	100	0
Current Liabilities		
Trade payables	140	380
Dividend payable	60	240
Short Term Borrowings	100	0
Current portion of long term borrowings	300	180
Total Current Liabilities	600	800
Total Liabilities	1,200	5,320

Frankie Limited - Income Statement - Year Ended 31st Dec 2011

	2010 RWFm	2011 RWFm
Revenue	3,600	7,200
Cost Of Sales	2,400	4,600
Gross Profit	1,200	2,600
Less: Expenses	900	1,580
Net Profit	300	1,020

Frankie Limited has recently negotiated a 30 day settlement period with most of its suppliers.

REQUIRED:

Prepare a report for the management of Frankie Limited that assesses the working capital management for the year ended 31st Dec. 2011. The report should:

- calculate and interpret the current and quick ratios for the years ended 31st Dec. 2010 and 2008. **(6 Marks)**

- calculate and interpret the working capital cycle for year's ended 31st Dec. 2010 and 2008**.** **(8 Marks)**

- comment on the overall working capital management and funding of Frankie Limited for the year ended 31st Dec. 2011. **(6 Marks)**

(TOTAL : 20 MARKS)

3. **Part A:**

Your client R Limited has been researching setting up a printing business. J R, the Managing Director, has asked you for some advice in relation to pricing.

REQUIRED:

J R has specifically asked you to prepare a briefing note that:

- explains the difference between margin and mark-up. **(4 Marks)**
- explains the concept of target costing. **(6 Marks)**
- lists five qualitative factors all businesses should consider when setting prices. **(5 Marks)**

(TOTAL: 15 MARKS)

OR

Part B:

Explain in detail the meaning and significance of any two of the following three terms:

- Objectives of Budgeting.
- Zero Based Budgeting.
- Overtrading.

(TOTAL: 15 MARKS)

SECTION B

(Answer Question 4 and either Part A or Part B of Question 5.)

4. George Limited is a metal fabrication company.
George Limited's Income Statements and Balance Sheets for the last two years are as follows:

George Limited

Balance Sheet As at 31st December 2009 and 2010

	2009 RWFm	**2010 RWF m**
Non Current Assets at NBV		
Property and Plant	6,000	7,000
Other Assets	400	600
Total Non Current Assets	6,400	7,600
Current Assets		
Inventories	750	1,125
Trade Receivables	500	1,000
Cash and Cash Equivalents	150	0
Total Current Assets	1,400	2,125
Total Assets	7,800	9,725
Equity and Liabilities		
Equity Attributable to Equity Holders		
2,000,000 Ordinary shares @ RWF2,000 each	4,000	4,000
10% Preference Shares @ RWF2,000 each	1,500	1,500
Other Reserves (Retained Revenue Reserves)	1,300	1,700
	6,800	7,200
Non Current Liabilities		
10% Debentures redeemable at par on 31/3/2010	0	1,000
Current Liabilities		
Trade Payables	500	750
Short Term Borrowings	0	675
Current Portion of long term borrowings	500	100
Total Current Liabilities	1,000	1,525
Total Liabilities	7,800	9,725

George Limited

Income and Expenditure Accounts for Years Ended 31st December 2009 and 2010

	2009	**2010**
	RWFm	**RWF m**
Revenue	6,000	8,000
Less: Cost of Sales	3,600	4,500
Gross Profit	2,400	3,500
Less: Expenses	2,300	3,000
Profit Before Tax	100	500
Tax @ 20%	20	100
Net Profit after Tax	80	400

1) George Limited's increase in trade receivable (debtors) days between years ended 31st December 2009 and 2010 was:

    a) 15 days
    b) 16 days
    c) 17 days
    d) 18 days

    Note: Assume 360 working days per year.

2) George Limited's operating cash cycle for the year ended 31/12/2010 was:

    a) 74 days
    b) 75 days
    c) 76 days
    d) 77 days

    Note: Assume 360 working days per year.

Further details relating to George Limited's Balance Sheet as at 31/12/2010 are as follows:

- Ordinary shares are presently trading at Rwf6,000 cum-div.
- Preference shares have a cum-div market value of Rwf 3,600.
- George Limited's most recent board meeting agreed a dividend for the year of Rwf 600 per ordinary share to be paid in one week's time.
- George Limited's board has indicated that they expect the average annual rate of growth in dividends to continue at 8% per annum.
- Debentures are presently trading at 92% of the value they were issued at.
- Debenture interest is paid annually. All payments relating to the y/e 31/3/2008 have been made in full.
- Preference dividends are paid half yearly. The dividend for the first half of the year ended 31st Dec. 2010 has been paid. Corporation tax of 20% is payable on profits in the year in which profits are reported.

3) Using the Gordon's Growth Model, George Ltd's cost of Equity (as at 31/12/2010) is:

    a) 5%
    b) 10%
    c) 15%
    d) 20%

4) George Limited's cost of Preference Shares (as at 31/12/2010) is:

    a) 3.71%
    b) 4.71%
    c) 5.71%
    d) 6.71%

5) George Limited's approximate cost of debentures (as at 31/12/2010) is:

    a) 13%
    b) 16%
    c) 19%
    d) 22%

6) George Limited's approximate Weighted Average Cost of Capital (WACC), based on market values (as at 31/12/2010 is:

a) 14%
b) 17%
c) 21%
d) 26%

George Limited is considering investing in the following proposed portfolio:

Investment 1 : RWF18billion may be invested in BA Ltd shares. The expected annual returns are as follows:

Annual Investment Return	Probability of Occurrence
6%	0 .2
10%	0.8

Investment 2 : RWF12b may be invested in Irish Railroads PLC shares. The expected annual returns are as follows:

Annual Investment Return	Probability of Occurrence
10%	0.4
20%	0.6

7) The expected return on the BA Ltd investment will be:

a) 6%
b) 9.2%
c) 14.9%
d) 20%

8) The expected return from the investment portfolio will be:

a) 10.92%
b) 11.92%
c) 12.92%
d) 13.92%

(TOTAL: 20 MARKS)

5. Part A:

Your client Jan Limited, who produces electric bikes, is planning a significant expansion programme. In order to obtain funds from their bankers they have been asked to present cash flow forecasts. Jan Limited has asked for your assistance to prepare a quarterly cash budget for the year ended 31st December 2012 for presentation to their bankers.

You have reviewed the budget working files and have held discussions with relevant employees. You have gathered the following information relevant to the preparation of the cash budget.

The sales projections for each quarter of 2012 are as follows:

Quarter 1 = 40,000 bikes
Quarter 2 = 52,000 bikes
Quarter 3 = 48,000 bikes
Quarter 4 = 54,000 bikes

- The price per bike has been set at RWF120,000 for the first six months of the year, increasing by RWF30,000 per unit for the remainder of the year 2012.

- Sales in quarter 3 and 4 of 2011 are forecast at 35,000 bikes at a sales price of RWF100,000 each.

- The variable overhead cost per bike is RWF10,000.

- Budgeted quarterly fixed production costs for the year 2012 are RWF2,900m. This includes quarterly depreciation of RWF425m.

- Bikes are manufactured on a Just-In-Time basis.

- Each bike requires two yards of steel tubing which costs Rwf8,000 per yard. This tubing is purchased on a Just-In-Time basis.

- Two hours of direct labour (team) are required for the production of each bike. Labour currently costs Rwf10,000 per hour per team and is subject to a pay award of 20% effective from 1st October 2012.

The Forecast Balance Sheet of Jan Limited as at 31st December 2011 is as follows:

Jan Limited - Projected Balance Sheet as at 31st December 2011

ASSETS	
Non Current Assets	
Land & Buildings	2,000,000
Plant & Equipment at Net Book Value	200,000
Current Assets	
Trade Receivables	3,500,000
Cash and Cash Equivalents	0
Total Assets	5,700,000
EQUITY AND LIABILITIES	
RWF10,000 Ordinary Shares	1,000,000
Accumulated profits	3,310,000
Current Liabilities	
Trade payables	1,350,000
Corporation Tax	20,000
Short Term Borrowings	20,000
Total Equity and Liabilities	5,700,000

Note: The trade payable figures can be broken down as follows:

- Quarter 3 purchases = RWF650,000,000
- Quarter 4 purchases = RWF700,000,000

Other relevant information is as follows:

- All sales are on credit. Debtors take three months to settle their accounts.
- Materials are paid for six months after the date of purchase. Wages and all overheads (fixed and variable) are paid in the quarter in which they are incurred.
- On 1st April 2012 plant will be purchased at a cost of Rwf30m. It will be paid for in full in August 2012.
- Corporation Tax owing on 31st December 2011 must be paid in September 2012.

REQUIRED:

Prepare a cash budget for Jan Limited for each quarter of year ended 31st December 2012.

(TOTAL: 20 MARKS)

OR

Part B:

A client, Tasha Limited, has asked you for advice in relation to usage of the limited supply skilled labour available during June 2008. Tasha Limited produces two products, the A and the B. During June 2008 it is anticipated that the skilled labour hours available will be limited to 8,000 hours.

The sales price per unit of A and B are Rwf14 and Rwf11 respectively. The indicative monthly demand for the products is 3,000 units of A and 5,000 units of B. The variable costs for each product are as follows:

	A RWF	B RWF
Direct Materials	1	3
Direct Labour (RWF3 per hour)	6	3
Variable Overhead	1	1
Total Variable Cost	8	7

Your client is concerned to ensure that it optimises the use of the skilled labour available during June 2008.

Note: Assume that opening and closing inventories of work in progress and finished goods for the month of June 2008 are nil.

REQUIRED

Prepare a briefing note for the management of Tasha Limited that:

- Explains the term "Limiting Factor" and advises on how the value to be created through a production decision involving a "Limiting Factor" may be optimised. **(6 Marks)**
- Advises on the profit maximising production mix of A and B and the maximum contribution that can be earned during the month of June 2008. **(14 Marks)**

(TOTAL: 20 MARKS)

END OF PAPER

SUGGESTED SOLUTIONS

Solution 1

Report

To: Board of Directors, Freeform Limited
From: Consultant Accountant
Date: 30th June 20xx
Subject: Financial Assessment – Butare Factory Location

Introduction
This report considers the financial and non financial factors to be considered relating to your proposal to locate a factory in either NGOMA or KIGEMBE.

Financial Analysis

Approach
As the proposal lasts for three years I have used the technique of discounting to allow for the time value of money over the three years. I have discounted each year's net cash-flows at 10%, Freeform Limited's cost of funds to arrive at the Net Present Value (NPV) of each proposal. Detailed workings and supporting notes can be found at Appendices 1 and 2 of this report.

Results
A summary of the financial results is as follows:

Summary of Results

	Investment Criteria
Factory	NPV Cost
NGOMA	15,814,405
KIGEMBE	15,297,563
Difference	516,842

Analysis
The KIGEMBE factory delivers a lower Net Present Value cost.

Other Qualitative Considerations

- The KIGEMBE option avoids (for three years) the redundancy of fifteen staff
- Could we employ staff from KIGALI to operate the NGOMA machinery
- The NGOMA proposal involves less investment risk as we are leasing a property rather than buying and developing a site
- There may be possible upside potential in respect of the ultimate value of the KIGEMBE site
- The NGOMA transport option is probably more environmentally friendly and the costs are competitive as the system is in the stages of development
- The KIGEMBE transport option seems more flexible and controllable then the NGOMA option
- Which site offers most opportunity to expand if additional contracts are awarded?
- Does the NGOMA site offer any flexibility in the event that the contract was delayed?

Appendix 1
Net Present Value – NGOMA Factory - RWF '000

Details	**Yr 0**	**Yr 1**	**Yr 2**	**Yr 3**
Annual Lease		-500,000	-525,000	-551,250
Machinery purchase	-4,000,000			
Staff costs		-455,000	-455,000	-500,500
Materials cost		-2,000,000	-2,000,000	-2,000,000
Redundancy				-260,000
Consumables		-1,000,000	-1,000,000	-1,000,000
Transport (Note 1)				-2,250,000
Net annual cash flows	-4,000,000	-3,955,000	-3,980,000	-6,561,750
Discount factor @ 10%	1	0.9091	0.8264	0.7513
Present values	-4,000,000	-3,595,491	-3,289,072	-4,929,843
Net Present Value				**-15,814,405**

Net Present Value – KIGEMBE Factory – RWF '000

Details	**Yr 0**	**Yr 1**	**Yr 2**	**Yr 3**
Site purchase	-4,000,000			
Site development	-1,500,000			
Site sale				3,000,000
Redundancy saved	750,000			
Redundancy payments				-600,000
Factory wages		-450,000	-450,000	-450,000
Subsistence payments		-360,000	-360,000	-360,000
Materials cost		-2,400,000	-2,400,000	-2,400,000
Lorry lease				-48,000
Consumables		-1,200,000	-1,200,000	-1,200,000
Transport (Note 2)				-1,794,000
Net annual cash flows	-4,750,000	-4,410,000	-4,410,000	-3,852,000
Discount factor @ 10%	1	0.9091	0.8264	0.7513
Present values	-4,750,000	-4,009,131	-3,644,424	-2,894,008
Net present value				**-15,297,563**

Note 1 Transport Costs	**Yr 3**
Metres transported	600,000
Km to BUTARE	15
Metre Kilometres	9,000,000
Cost per metre Km	0.25
Transport Cost	2,250,000

Note 2 Transport Costs	**Yr 3**
Metres transported	600,000
Metres per load	50
Trips to BUTARE	12,000
Miles to BUTARE	16
Total outward Km travelled	192,000
Total inward Km travelled	192,000
Driver's annual salary	30,000
Port tunnel tariff (12,000 trips @ RWF 35)	420,000
Outward Km cost (192,000 Km @ RWF 5)	960,000
Homeward Km cost (192,000 Km @ RWF 2)	384,000
Total Transport Cost	**1,794,000**

Solution 2

Report

To: Management, Frankie Limited
From: A. Other, Accountant
Date: 20th June 20xx
Subject: Working Capital Management

Introduction
This report reviews Frankie Limited's working capital management during the year ended 31st Dec 2011.

Current Ratio
The current ratio of Frankie Limited's has improved to 3.13:1 [2500:800] in year ended 31st Dec. 2011 from 1.16:1 [700:600] in year ended 31st Dec. 2010. This represents a significant improvement in liquidity exceeding the generally accepted principle that the current ratio should be in excess of 2:1.

Quick Ratio
Frankie Limited's quick ratio has improved from .87:1 [520:600] in year ended 31st Dec. 2010 to 2.69:1 [2150:800] in year ended 31st Dec. 2011, far in excess of the recommended quick ratio of 1:1.

Working Capital Cycle

Frankie Limited's working capital cycle has reduced from 26.4 days to 18.5 days during the year ended 31st Dec. 2011. Details are as follows:

Frankie Limited
Operating Cycle Calculation (Days)

	2010 Days	**2011 Days**
Inventory Days	27.4	27.8
Trade Receivable Days	20.3	20.8
Trade Payable days	-21.3	-30.1
Operating Cycle	26.4	18.5

Whilst there has been no appreciable change in the inventory or debtor days the increase in the creditor days to 30 from 21 has shortened the working capital cycle.

Overview

Working Capital Management

Frankie Limited's liquidity has improved during the year. It has also reduced its working capital cycle by 8 days by availing of the extended credit terms negotiated with suppliers over the last year. This represents effective working capital management.

Funding

Frankie Limited has enjoyed a year in which both turnover and profits have increased considerably. Frankie Limited has funded this investment in non-current assets of Rwf2.32Bn by raising long term (equity) finance of Rwf3Bn.

This has avoided the potential for overtrading so common in expanding businesses. Thus it has funded the business appropriately.

It is worth pointing out that Frankie may be overcapitalised as it hadRwf1.74bBn in cash reserves at 31st Dec. 2011.

This raises the question as to whether it was necessary to raise the full Rwf3b in equity finance. Perhaps, a significant proportion of the necessary expansion funds could have been obtained through a mixture of retained earnings and medium term loans?

Solution 3

a) Briefing Note

To: Jerry Ring, Managing Director, Ring Limited
From: A. N. Other, Accountant Advisor
Subject: Pricing
Date: 18th June 20xx

Introduction

The pricing decision is one of the most critical decisions an organisation can make. It will impact directly on brand image, customer perception, profitability, margins, sales volumes and competitive positioning.

There are many approaches to pricing. This note explain some of the basic methods employed.

Margin and Mark-up

It should be appreciated that both margin and mark up refer to the same absolute profit. It is simply the context in which the profit is expressed that differs. The following example refers:

Ring Limited	
Example 1	RWF
Cost of Materials for one printing job	1000
Mark up of 100% (Profit element)	1000
Selling Price of print job	2000

Example 2	RWF
Selling Price of printing job	2000
Margin of 50% (Profit Element)	-1000
Cost of Materials for print job	1000

In example one the profit element of RWF1,000 on the printing job is expressed as mark-up on cost which is 100%. That same profit (RWF1,000 for the print job) is expressed as a 50% margin on selling price in example 2.

Target Costing
This is an approach which in its most basic form involves the following steps:

Step 1 – Market mapping

This involves researching an organisation's market in order to determine the following:

- What specification customers require
- What price customers will be willing to pay for a particular specification
- What sales volumes are likely to be achieved for the particular specification at the suggested price

Step 2 - Deducting an agreed and acceptable level of margin from the target price.

this results in the target cost at which the product/service must be made/delivered.

Step 3 – Meeting The Target Cost Challenge

The accountants, engineers and designers etc. set about the challenge to make/supply the product/service to the desired specification within the target cost.

If successful, target costing should ensure that the necessary specification can be made at a cost which will enable a price to be set which will deliver the level of margin and sales volume required to satisfy the financial objectives set for that particular product.

Other Factors

It must always be borne in mind that many other external and internal factors will impact on the pricing decision. Such factors will include:

- Price sensitivity of demand
- Prices of competitors
- Economic conditions
- Product life-cycle
- Desired brand image

Conclusion
The pricing decision is critical for all businesses and involves a careful consideration of many factors.

b) Objectives of Budgeting

Compels Planning
Budgeting forces management to look ahead, to set out detailed plans for achieving targets for each department, operation and manager.

Communicates Ideas and Plans
A formal budgeting system helps ensure that each person affected by the plans is aware of their responsibilities to ensure the achievement of objectives.

Co-ordinate Activities
The activities of different departments need to be co-ordinated to ensure everyone in the organisation is working towards the same goals.

Provision of a framework for responsibility accounting
Budgets require that managers are made responsible for the achievement of budget targets for the operations under their personal control.

Establish a System of Control
Control over actual performance is provided by comparisons of actual results against budget. Departures from budget can then be investigated and the appropriate control action taken.

Motivation
The interest and motivation of employees can be retained if there is a system that reports on how they are performing against budget.

Overtrading

Overtrading occurs when an organisation attempts to support an increasing recurrent investment in working capital and non-current assets without having sufficient long term funding in place. Overtrading may lead to liquidity problems and is particularly prevalent in rapidly expanding businesses.

Symptoms of overtrading may include:

- rapid increase in turnover
- rapid increase in inventory holding and trade receivables
- deteriorating cash holdings
- deteriorating current and quick ratios
- inability to meet obligations when they fall due

To avoid overtrading management must ensure that long term sources of funds are used to fund the recurrent investment in working capital and non-current assets.

Zero Based Budgeting (ZBB)
This approach involves setting budgets each year as if doing so for the first time. i.e. starting from a zero base.

The system involves an annual root and branch review of each budget with budget resources being allocated to the highest value added proposals.

Benefits:

i. it eradicates budget slack
ii. budget holders cannot assume an automatic right to receive an allocation, thus it avoids complacency
iii. budget resources are directed to those activities delivering the highest value added
iv. it creates a climate/culture where change and innovation are the norm

Limitations

i. it is an expensive system to maintain and support
ii. constant change may unsettle employees and budget holders

Solution 4

1) **George Limited**

Increase in Debtors Days

Indicator	**Formulae**	**Days**
Debtors Days y/e 31/12/10	Closing Debtors/Sales * 360	30
Debtors Days y/e 31/12/11	Closing Debtors/Sales * 360	45
Increase in Debtors Days		15

2) **George Limited**

Operating Cash Cycle ended 31st December 2010

Indicator	**Formulae**	**Days**
Stock Days	Closing Stock/Cost of Sales * 360	90
Debtor Days	Closing Debtors/Sales * 360	45
Creditor Days	Closing Creditors/Cost of Sales * 360	-60
Operating Cash Cycle		**75**

3) **Note 1)Cost of Equity (Gordon's Growth Model)**

[.60*(1+.08)/(6.- .60)] +.08 = 20.00%

4) **Note 2)Cost of Preference Shares**

Interest Payable/Ex Div. Market value

= 20/(360-10) * 100 = 5.71%

*RWF2k @ 10% = 20 cent dividend per annum of which RWF 100 has yet to be paid.

5) Note 3) Cost of Debentures (IRR Calculation)

Year	Value	Interest	Tax Relief	Redeem	Net C Flow
	RWFm	RWFm	RWFm	RWFm	RWFm
0	-920.00				-920.00
1		100.00	-20.00		80.00
2		100.00	-20.00	1,000.00	1,080.00

	Discount @ 10%			Discount @ 15%		
Year	**Net C Flow**	**D Factor**	**PV**	**Net C Flow**	**D Factor**	**PV**
0	-920	1.0000	-920.00	-920.00	1.0000	-920.00
1	80	0.9091	72.73	80.00	0.8696	69.57
2	1,080	0.8264	892.51	1,080.00	0.7596	816.59
	Net Present Value +		45.24	Net Present Value -		33.84

IRR (Cost of Debentures) =10%+[45.24/(45.24+33.84)]*(15%-10%) = 12.86%

6)

WACC	Note	MV	% Cost	Weighting	% Weight	Weighted
Ordinary Shares (ex div)	1	10,800,000	20.00%	10800/14345	75.29%	15.06%
Preference Shares (ex div)	2	2,625,000	5.71%	2625/14345	18.30%	1.05%
Debentures at MV	3	920,000	12.86%	920/14345	6.41%	0.82%
Weighted Average Cost of Capital		14,345,000			100.00%	16.93%

7) Investment in BA Ltd

% Return	Probability	Expectation	Deviation	Deviation Squared		S Deviation = Square Root
X	**P**	**x*p**	**x-EV**	**$(x- EV)^2$**	**$p(x- EV)^2$**	**$p(x- EV)^2$**
6	0.2	1.2	-3.2	10.24	2.048	
10	0.8	8	0.8	0.64	0.512	
Expected Value (EV)		**9.2**			2.56	**1.6**

8) Investment in Irish Railroads PLC

% Return	Probability	Expectation	Deviation	Deviation Squared		S Deviation = Square Root
X	**P**	**x*p**	**x-EV**	**$(x- EV)^2$**	**$p(x- EV)^2$**	**$p(x- EV)^2$**
10	0.4	4	-6	36	14.4	
20	0.6	12	4	16	9.6	
Expected Value (EV)		**16**			24	**4.9**

Expected Portfolio Return

Investment Share	Expected % Return	Weighted Investment	Expected Portfolio Return
BA	9.2	60%	0.0552
IR	16	0.4	0.064
Expected Return (Ev)			**11.92%**

Summary

Part 1 = A
Part 2 = B
Part 3 = D
Part 4 = C
Part 5 = A
Part 6 = B
Part 7 = B
Part 8 = B

Solution 5

a) Jan Limited

Projected Cash Budget - Year Ended 31st December 2009

Details	**Quarter 1**	**Quarter 2**	**Quarter 3**	**Quarter 4**
Receipts From Debtors	3,500,000	4,800,000	6,240,000	7,200,000
Payments				
To raw material suppliers	-650,000	-700,000	-640,000	-832,000
Direct Wages	-800,000	-1,040,000	-960,000	-1,296,000
Variable Overheads	-400,000	-520,000	-480,000	-540,000
Fixed Overheads – Cash	-2,475,000	-2,475,000	-2,475,000	-2,475,000
Corporation tax			-20,000	
Purchase of plant		-30,000		
Net in Month Cash Movement	-825,000	35,000	1,665,000	2,057,000
Opening Cash Balance	-20,000	-845,000	-810,000	855,000
Closing Cash Balance	-845,000	-810,000	855,000	2,912,000

b) Briefing Note

To: Management Team, Tasha Limited
From: Accountant Advisor
Subject: Limiting Factor Decision Making
Date: 31st May 2008

Purpose

The purpose of this note is to explain the term limiting factor and to advise on how the limited skilled labour available during June 2008 may be used to optimise profitability.

Key Terms

Limiting Factor

A limiting factor exists when an organisation is prohibited from making infinite profits. In most organisations sales demand normally constitutes the limiting factor. However, it may also be an/any combination of input resource such as raw materials, direct labour hours and machine capacity. In Tasha Limited's case it is expected that the availability of skilled labour hours will constrain the sales of your products A and B during June 2008.

Decision Making with one Limiting Factor

Where there is one only limiting factor in existence the use thereof is optimised by applying the following rule:

PRODUCE FIRST THAT UNIT OF PRODUCTION WHICH DELIVERS THE HIGHEST CONTRIBUTION PER UNIT OF LIMITING FACTOR.

If more than one limiting factor exists then the mathematical technique of Linear programming is employed to derive the optimum solution. This is not the case for Tasha Limited for June 2008 as only one limiting factor, skilled labour hours is likely to exist.

Determination of Optimum Use of Skilled Labour Hours

The steps followed to ensure the optimum use of the limited skilled labour hours during June 2008 are as follows:

Step 1

Confirm that the limiting factor is something other than sales demand.

	A	B	Total
Labour Hours Per Unit	2	1	
Sales Demand	3000	5000	
Labour Hours Required	6000	5000	11000
Labour Hours Available			8000
Labour Hours Shortfall			-3000

As there is a shortfall in labour hours, it is a limiting factor.

Step 2

Identify the contribution earned by each unit per unit of limiting factor and rank the products from highest to lowest.

	A	B
Sales Price Per Unit	14	11
Variable Cost Per Unit	-8	-7
Contribution Per Unit	6	4
Labour Hours Required Per Unit	2	1
Contribution Per Labour Hour	3	4
Production Ranking	2nd	1st

Step 3

Determine the optimum production plan by producing the first ranked product to meet sales demand and then the second ranked product to meet sales demand and so on until the limiting factor is exhausted.

Optimum Production Plan

Unit	**Quantity**	**Hours per unit**	**Hours Required**	**Hours Available**	**Surplus Hours**
B	5,000	1	5,000	8,000	3,000
A (balance)	15,000	2	3,000	3,000	0

The optimum production plan will be to produce 5000 A and 1500 B.

Step 4

Determine the Profit/Contribution to be made from the optimum production plan.

Indicative Contribution	A	B
Sales Price Per Unit	14	11
Variable Cost Per Unit	-8	-7
Contribution Per Unit	6	4
Units to Produce	1500	5000
Contribution Expected	9000	20000
Total Contribution Expected		**29000**

This is the maximum contribution that can be earned during June 2008 from products A and B given that only 8,000 skilled labour hours will be available during the month.

Conclusion

Where limiting factors exist it is critical to ensure that they are identified and subsequently utilised used to ensure that maximum financial benefit is derived therefrom.

END OF SOLUTIONS